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Macworld is published by IDG UK
IDG UK, 101 Euston Road, London NW1 2RA. Tel: 020 7756 2800
Printer: Wyndeham Press Group Ltd 01621 877 777
Distribution: Seymour Distribution Ltd 020 7429 4000

Macworld's digital evolution

AFTER 30 YEARS IN PRINT, IT'S TIME TO FOCUS EXCLUSIVELY ON DIGITAL

By Karen Haslam

As a reader of the iPad edition of our magazine, you may not be aware that we've been publishing Macworld's print magazine in the UK since 1985, a year after our sister publication in the United States launched, with Steve Jobs smiling on the cover, on the same day that Apple launched the Macintosh.

We've seen an awful lot of change in that time. This is no longer a magazine just about the Mac. As Apple has evolved from just a computer company, Macworld has evolved into a title that covers every product Apple builds – from the Mac, to the iPhone, iPad, Apple TV, and now the Apple Watch. And then there's all the software that Apple sells. Just writing about Apple products alone is enough to fill all the pages of this magazine every month.

But times have changed, and we are in a digital age now where people are getting their information about Apple from the web, not print magazines.

Our website Macworld.co.uk has been going strong since 1997 (the year Steve Jobs returned triumphantly to Apple), and in recent years has gone from strength to strength in tandem with Apple's own renaissance. Macworld's online traffic has grown 600 percent in the past 18 months, with 16 million page views a month.

As Apple experts we are able to offer advice to millions of people every

month via our website. In the past month 10 million people enjoyed content on our website – you may have been one of them.

As online has taken off the number of people buying print magazines has tailed off, and advertisers have moved online, too. As a result, we will no longer be producing the print edition.

It's sad to wave goodbye to a medium that's in our hearts, but with Macworld now the most viewed Apple-focused media website in the world, we think it's time to retire the print edition and focus entirely on digital – much like Apple itself.

But this isn't the end of Macworld as a magazine. Far from it. The good news is that we will continue to produce Macworld magazine as a digital edition, available to read on your iPad. We have seen our subscribers move to the iPad edition in droves over the years – as you would expect from a group of readers who love their Apple products and recognise that there is no better way to read a magazine than on a tablet.

There are also benefits to producing the magazine as a digital edition. We are not tied to long print deadlines, which means we can turn around an issue quickly – getting the very latest information into the magazine and on to the Apple Newsstand and the other places where we sell the digital edition within hours rather than weeks. And the trees will thank us, too.

A prime example of this is the fact that this issue will hit the shelves just before Apple announces the new iPhones for 2015. We have already decided to hold the digital edition of this magazine back a few days so that we can get that news in it – because we can. And that's got to be good for our readers. The move away from print will allow us to make a more iPad-friendly version of the magazine too, so expect to see some change.

So I hope you can join us in bidding the print version of Macworld magazine a fond farewell, while looking forward to the other ways in which we can bring you everything you need to know about Apple, be it up-to-the-minute information on our website, or in-depth curated content in the iPad edition of the magazine. Change is a good thing and we think the future is bright.

Apple's iPad Pro finally here

IT'S GIANT, IT'S POWERFUL, PLUS THERE'S A KEYBOARD AND STYLUS

By Oscar Raymundo

The iPad Pro, revealed during Apple's recent event, is the most powerful iOS device ever made, and "the biggest iPad news since the iPad," CEO Tim Cook said from the stage. The iPad Pro also has two new accessories: the Smart Keyboard and Apple Pencil.

Apple's king-size tablet measures 12.9 inches on the diagonal. With 5.6 million pixels in a 2732x2048 resolution, the iPad Pro has a higher resolution than the 15in MacBook Pro with Retina display. And according to Apple, the new multitasking capabilities in iOS 9 were specifically designed to make the most out of the iPad Pro.

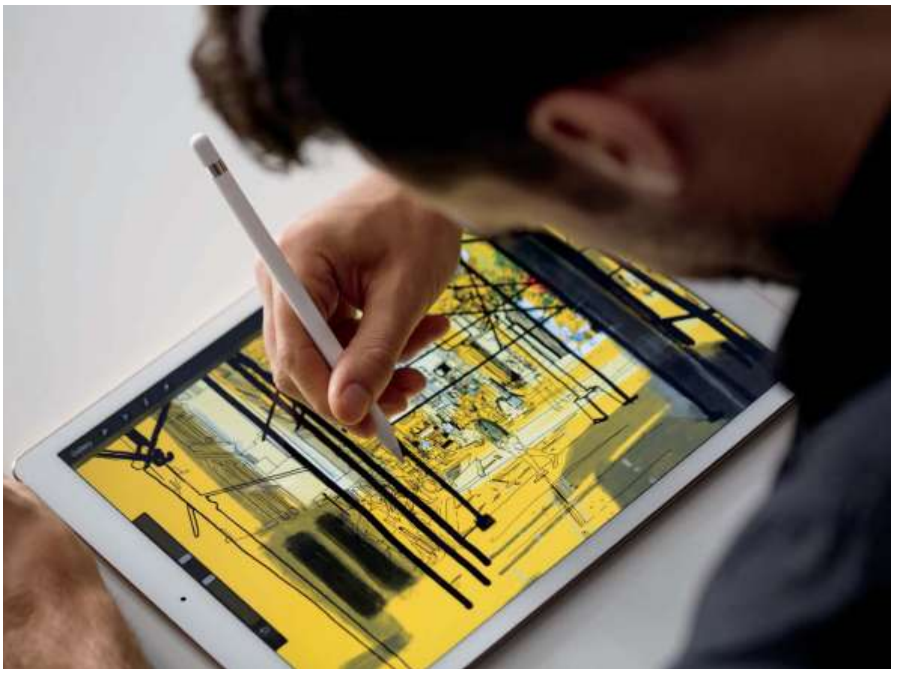
Available in November, it will be available in Silver, Gold and Space Grey. While no UK pricing has been announced, we can get an idea how much you'll have to pay by looking at US prices.

32GB model with Wi-Fi:
$799 (around £519)
128GB model with Wi-Fi:
$949 (around £616)
128GB model with Wi-Fi and cellular capabilities:
$1,079 (around £700)

The iPad Pro comes with Apple's new A9X chip, which has twice the memory and is 1.8x faster than the A8X chip in the iPad Air 2. Apple calls this "desktop-class performance," so you'll be able to do things on the iPad Pro that you previously reserved for your Mac.

Additionally, Apple has updated the storage controller so you can quickly open large files, like 4K video, hi-res photos from your DSLR, or that seemingly endless PowerPoint presentation your boss wants you to edit.

The iPad Pro is a bit thicker and heavier than its previous Air 2 counterpart, but not significantly considering all the improvements. It's 0.8mm thicker and 276g heavier.



Features include a multi-touch display, 8Mp iSight camera, 1080 HD video recording capabilities, 802.11ac Wi-Fi technology with MIMO, Touch ID, LTE and an Apple SIM.

Apple Pencil and Smart Keyboard

Apple also revealed two new accessories for the iPad Pro: the Apple Pencil and Smart Keyboard. Both will also be available to buy in November.

Costing $99 (£65), Apple's first stylus for the iPad Pro is pretty self-explanatory. You can use it to add handwritten notes to your digital documents, but it's also got some interesting technology that will be particularly helpful for sketch artists.

The Apple Pencil has several sensors on both its case and the tip that can detect the position, pressure, angle, and orientation of your strokes. Draw gently on the screen to create light strokes, or press down to draw thicker lines. Two sensors on the tip work with Multi-Touch display to detect whenever you're tilting the Pencil to create a shading effect. Apple's stylus can also be used simultaneously with your fingers, for those who have yet to graduate past the finger paintings stage.

The $169 (£110) Smart Keyboard is basically a Smart Cover with a slim, foldable, lightweight, water-resistant, 4mm keyboard built in. In addition to using it to type, you can fold up the Smart Keyboard to prop up the iPad Pro or cover up the screen completely.

Apple has created a new three-pronged Smart Connector that allows for the Smart Keyboard to be connected to the iPad without plugs or wires or Bluetooth pairing. It's similar to how the Apple Watch's diagnostic port works. The Smart Connector allows for the seamless transfer of data and power between devices, so you won't have to charge the Smart Keyboard.

iPhone 6s and 6s Plus debut 3D Touch displays

APPLE REINVENTS THE MULTI-TOUCH DISPLAY FOR ITS NEW iPHONES

By Caitlin McGarry

Apple's new iPhones don't look a whole lot different from last year's models, but the iPhone 6s and 6s Plus have a next-generation multi-touch display that Cupertino expects will change the way you use a touchscreen.

CEO Tim Cook said the iPhone 6 is the company's most successful iPhone ever. How to top that? Well, the 4.7in iPhone 6s and 5.5in 6s Plus will have 3D Touch displays that are similar to the Apple Watch's Force Touch. A press will now unlock shortcuts in the apps you use every day, like Messages, Mail, Instagram, and more.

When you lightly press on an app on your home screen, a short list of shortcuts will pop up. For instance, using Force Touch on the camera icon will pop up a selfie shortcut. Facebook is using the feature to allow you to check in to a place or post a new status straight from your home screen.

Within an app, a light press will give you a preview of content you're trying to see without opening it, such as an email or a photo. You can also preview web links, an address in Maps, or a calendar view from a day and time without actually launching Safari, Maps or Calendar. This quick look feature will drastically reduce the time spent switching between apps, although iOS 9 also has a new app-switching feature that makes it simple to get back to the app you were in.

Apple calls these new gestures "peek and pop" and "quick actions".

A camera for the selfie generation

The iPhone's camera system is getting an overhaul that includes a 12Mp rear camera sensor, a 5Mp FaceTime camera with Retina flash for low-light selfies, and support for 4K video-recording. Schiller promised the new camera sensors won't degrade your photos' image quality.

One of the coolest new iPhone features is Live Photos, which some have compared to animated GIFs, but are really so much more. When you take a photo with the 6s or 6s Plus, the iPhone camera will also capture the moments before and after that still image was taken. When you press on the photo, you'll be able to see those few seconds, which will make your images seem alive – more like cinemagraphs than GIFs. And, of course, you'll be able to use those Live Photos as your Apple Watch face with watchOS 2.

Both models are made of Apple's 7000 series aluminium alloy, the same stuff the Apple Watch is made of. The 6s and 6s Plus also have a stronger glass, and will come in Rose Gold, in addition to Silver, Gold, and Space Grey. They also feature Apple's new A9 chip, now embedded with Apple's M9 motion coprocessor.

Availability and price

Apple's new iPhones are available to preorder now, though they don't go on sale until September 25. Below is a list of UK prices.

16GB iPhone 6s: £539
64GB iPhone 6s: £619
128GB iPhone 6s: £699
16GB iPhone 6s Plus: £619
64GB iPhone 6s Plus: £699
128GB iPhone 6s Plus: £789

Apple TV finally overhauled

SIRI AND THE APP STORE ARE THE STARS OF APPLE'S NEW SET-TOP BOX

By Jared Newman

Apple is reentering the living room with the 2015 Apple TV, a new set-top box that streams video, plays games, and uses Siri to answer your every entertainment whim. While the basic shape of the new Apple TV hasn't changed, it is about 10mm taller than its predecessor, presumably to make room for all the added computing power under the hood. Gone is the crusty old A5 processor, and in its place is a 64-bit A8 chip. Around the back, there's HDMI and ethernet, but no optical audio output.

At first glance, the new Apple TV has a similar interface to that of its predecessor. A strip of recommendations sits on top, followed by a list of apps underneath.

The big difference is that there's an entire App Store, rather than a preset list of Apple-curated selections. Streaming media apps such as Netflix will be present, as they were on the old Apple TV, but Apple is also inviting new kinds applications that aren't strictly about entertainment. Gilt, for instance, will let users go clothes shopping.

Apple is referring to its television software as "tvOS," and will offer a software development kit for app makers. The interface also has a refreshed the look and feel of the software, ditching the staid black background of the old Apple TV, and using lighter colours and transparency effects.

Beyond the visual interface of Apple TV lies one that's entirely controlled by Siri, Apple's virtual assistant. You can use Siri to open apps by voice, or ask for specific movies, TV shows, or actors. Drawing on iOS 9's cross-app search features, Siri will be able to dig up content from apps such as Netflix.

While Apple TV isn't the only media streamer with cross-app search, the secret sauce with Siri is its ability to interpret natural-language requests, even highly specific ones such as "Show that *Modern Family* episode with Edward Norton." You can also ask for specific genres, and narrow down the search with requests such as "just the latest."

A new kind of remote

The new Apple TV remote is a sharp departure from the previous one – and from all other media streamer remotes, for that matter. Instead of directional buttons, Apple's remote uses a touchpad for navigation, letting users swipe to move through menus quickly or scrub through video playback.

The remote does have a handful of physical buttons, though: a home button, a Siri button, a play/pause button, and a volume rocker. Whereas the previous Apple TV remote communicated strictly via infrared, the new remote uses Bluetooth, so users no longer need line-of-sight to the set-top box. Infrared is still included, presumably for controlling TV volume, and HDMI-CEC support will let Apple TV automatically turn on the television and switch to the correct input when you power it up. The remote's built-in battery lasts for three months, and recharges via a Lightning cable.

Apple is touting the its set-top box as more than a media streamer. It's also a lightweight game console, following in the footsteps of Amazon's Fire TV and Google's Android TV platform. The difference here is that Apple is building a console around its default, bundled remote. Onstage, Apple brought out the developers of Crossy Road to show off a multiplayer version of its iOS hit, and Rock Band developers Harmonix demoed a rhythm-sports hybrid game where players swing the remote like a baseball bat (similar to Nintendo's Wii remote).

Pricing and release date

Apple hasn't given an exact release date for the new Apple TV, but says it'll launch in late October. In the US, the entry-level 32GB model will cost $149 (£99), while the 64GB version is priced $199 (£129).

Attack of the clones

WHY THE APP STORE DESPERATELY NEEDS A 'REPORT CLONE' BUTTON

By David Price

In a recent article for Macworld.co.uk, I made a video extolling the virtues of what I believe to be the 10 best games currently available for the iPad and iPhone. This was lots of fun, but I was slightly saddened to notice that three of my top four (Legend of Grimrock, Don't Starve and the mighty FTL, if you're interested) are not iOS originals: they were all developed for PC, then ported across to mobile when they made it big.

With respect to PC gamers, that's not how this was supposed to work. With low barriers to entry for developers and a vast, affluent user base, the iOS App Store was supposed to be a brave new world of innovation for the games industry: one that would leave PCs and the big consoles trailing in its wake. Yet even an iOS gaming evangelist like myself has to acknowledge that the best games on the iPad and iPhone at present are ports from other platforms.

I promise I didn't plan it this way, but it's striking too that the two highest-placed iOS originals on my list – Threes! and Monument Valley, at numbers five and three respectively – were made by software teams who have discussed publicly the problems of developing for the App Store, or at any rate for mobile in general.

Pricing for a market that has decided that £2.49 is really quite a lot for a game (What's that, £4.60 for a pint? Yes please, I'll have six) and competing with freemium. Getting users to rate your games, and persuading them not to crash your rating when you have the audacity to release extra levels as an in-app purchase. And putting your heart and soul into a game only to see it cloned by a bunch of chancers within weeks of launch. The cloners are winning. And if we don't stop them, games such as Threes! and Monument Valley will increasingly be the exception on the App Store.

Apple, it's not too late to embrace the dream once again. And this is the perfect opportunity to differentiate yourself from Android. Just as Twitter belatedly responded to grass-roots activism with a 'report abuse' function, the App Store needs a similar crowdsourced approach to taking down the app cloners, and give the talented devs – the ones who are coming up with great ideas – the opportunity to flourish.

I think that every game (every app, in fact) should have a 'report clone' button on its App Store entry. You spot a clone, you press the button. (There could be an optional field to enter the name of the original game, too, if you want to speed up the investigation process.) If enough people accuse an app of cloning another, Apple's team investigates – and if the accusation is well-founded, the cloners would be given the choice of removing the offending app from the store, or keeping it there but from then on diverting a proportion of their revenue to the originator.

Sure, it's going to be messy at first. And open to abuse, but so is the app-rating system, and Apple happily keeps that. Let's say that you need to be logged into an account to report a clone. For every clone you spot, your secret clone-spotting credibility algorithm gets a tweak upwards. And for each accusation that leads nowhere, your algorithm goes down. People would still game the system, I'm sure, but they'd see diminishing returns.

Best of all, it would create one extra headache for cloners, and might even send a bit of cash the way of deserving creative types who we really don't want to give up on this whole App Store thing.

6 REASONS TO GET EXCITED ABOUT

WE REVEAL WHY YOU SHOULD BE EXCITED BY EL CAPITAN

By Jason Snell

I'm not feeling a lot of love for OS X El Capitan out there. That might not be surprising, given that it's firmly in the tradition of Mountain Lion and Snow Leopard – new-feature-light, speed-and-stability-focused OS X updates. But as someone who reviewed both Snow Leopard and Mountain Lion, I can tell you that not only did these releases contain a bunch of bug fixes and other internal tweaks, they also managed to add a bunch of new features, too. Apple can't help itself.

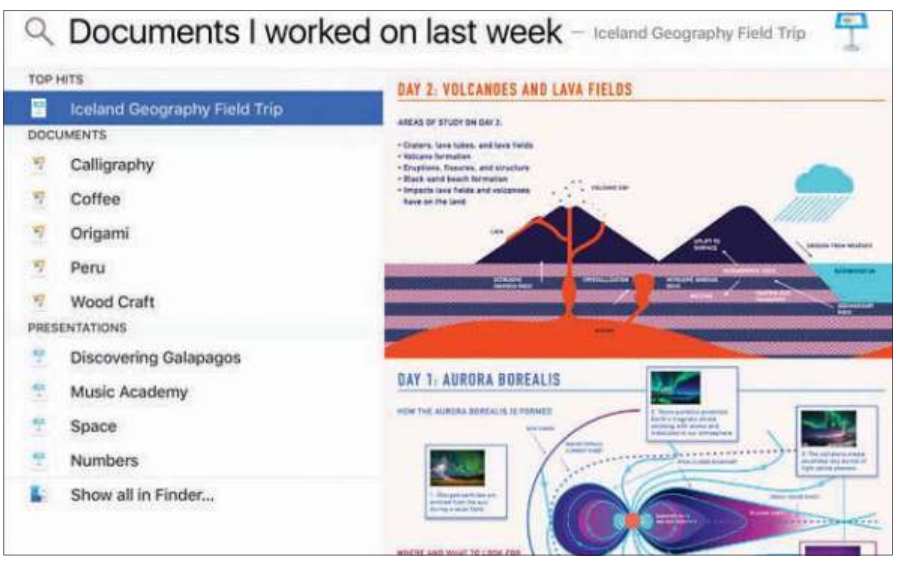
So let me present to you six reasons to be excited about what's coming.

Spotlight as search engine

Some people love clicking around looking for things, whether it's on their computer or on the internet. For those people we have navigation bars on websites and the Finder on the Mac. But some people would really rather just type what they're looking for into a box and hope that the result works for them.

The better the results from those searches get, the more time you can save versus clicking around. With El

EL CAPITAN

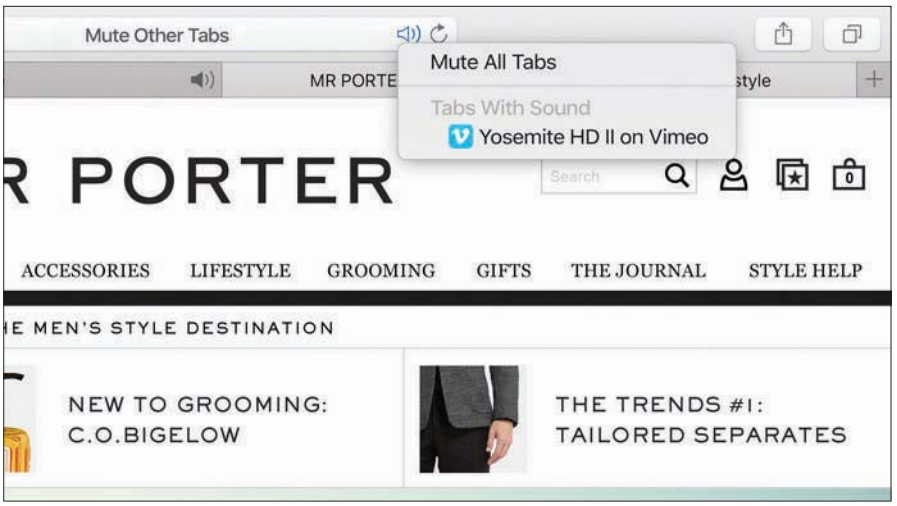


Capitan, Apple is making Spotlight even more of a search engine than it was previously. Yosemite brought a bunch of new internet data sources to Spotlight, and El Capitan brings even more. If you're wondering about something, be it on your Mac or out in the rest of the world, Spotlight can try to bring it to you.

And in El Capitan, Spotlight will also react to natural-language queries. You'd be surprised to discover just how many people type complete sentences into search boxes on the web. Sure, all of my searches are based on keywords (delete facebook account), but some of the most popular searches on the internet are complete sentences (how do I delete

my Facebook account). Spotlight now speaks that language.

Apple doesn't need to launch its own search-engine competitor to Google, Bing and DuckDuckGo. It can integrate all of those search engines while overlaying its own data sources – catching many of your queries before you have to resort to a web search engine. It's happening on iOS and it's happening in El Capitan.



Notes

I know it's not cool to like the Notes app, either on iOS or on the Mac. After all, it's just a next-generation version of Stickies. (By the way, I am shocked to report to you that the Stickies app is still kicking around.)

Notes doesn't have features, but that's okay. It runs on all my devices and syncs between them. I use Notes on iOS all the time when I just need to toss text somewhere and access it later somewhere else. In iOS 9 and El Capitan, Notes is getting an upgrade. It has finally abandoned IMAP syncing (seriously, why did Notes spend years syncing via your email account?) and properly uses iCloud now. And there are numerous new features, including support for clippings and checklists.

According to Apple, half of iPhone users use Notes regularly. I'm one of those people, and I refer to those notes on my Mac frequently. I'd never call Notes an essential app, but it's ubiquitous, and improving it seems only right.

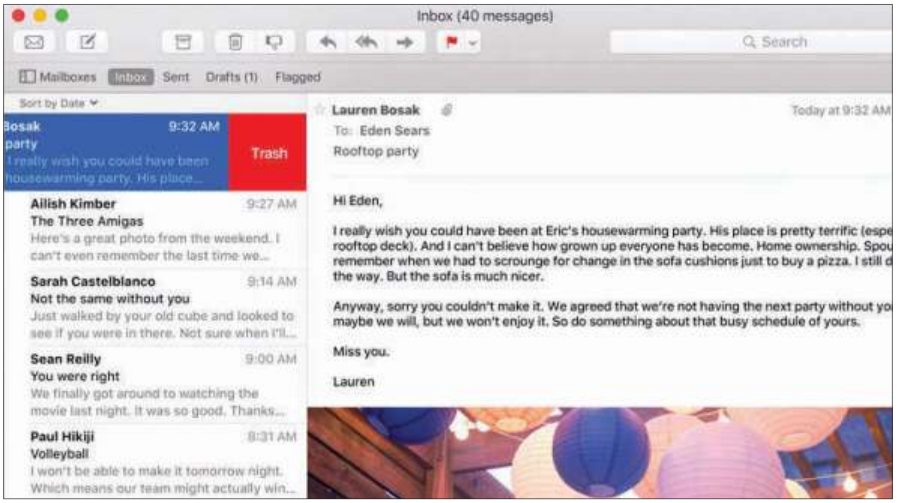
Safari

Safari's my default web browser and I use it endlessly, so I'm happy to see Apple continuing to find new ways to improve it. It would be really easy for Apple to rest on Safari development and consider web browsing a solved problem, but that hasn't happened.

In El Capitan, Safari adds support for muting of audio in stray tabs – huge for dealing with sites that really like to play video automatically. As someone who doesn't rely on RSS feeds but does have a collection of sites I like to visit regularly, I'm enthusiastic about the new Pinned Sites feature, which is sort of like a fancy version of the Favorites Bar, keeping your very favorite sites one click away. It's the kind of feature that novices and power users alike can appreciate.

Mail

I've still got a love/hate relationship with the Mail app. I use it for a while, then quit it for an alternative, but eventually seem to end up back in its clutches. But the fact is, most Mac users who use a Mail app use Mail – it's right there. And as with Safari,

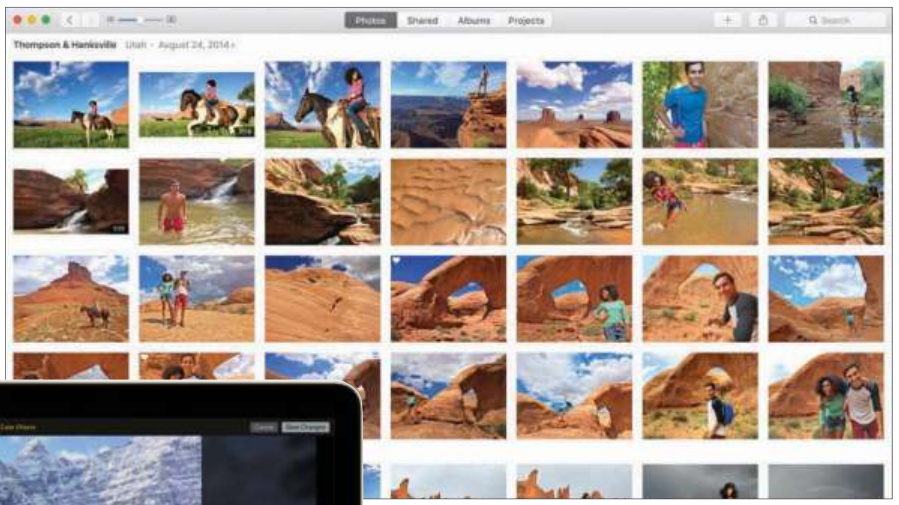


Apple keeps pushing the ball forward. I used the Mailbox app for a while and really enjoyed its interface, which (as on iOS) lets you swipe on messages to file or delete them. It's a metaphor that really works if you're using a trackpad, and Apple's integrating it into Mail with El Capitan. It's not the most discoverable feature in the world, but if you do learn how to use it, it's quite a time saver.

Photos

Photos for Mac arrived a few months ago, and is getting its first notable update with El Capitan. By far the most glaring feature omission from Photos 1.0 was the ability to add or edit location information. That feature has been added in the new version of Photos that comes with El Capitan, along with other metadata editing features, both individually and in batches.

There's also support for third-party photo editing extensions, which should please Aperture users who have made the move to Photos and found it limiting. It's unclear which third parties will actually write editing plug-ins for Photos, but the capability will be there in El Capitan.



Speed and stability

Let's not forget that bug fixes and speed boosts are features. And they're worth getting excited about. I've heard from many Mac users who have been frustrated by bugs they've encountered in Mavericks and Yosemite. Apple's upgrade cycle, providing a new version of OS X and iOS (and now maybe watchOS, too) every single year, seems relentless. It's probably wise for the company to ease back to more of a tick-tock approach, with a major release followed by a year of retrenchment and focus on refining the new stuff that's been added.

It's unclear whether that new tick-tock approach is happening or not, but at least for this year Apple's OS releases seem to be tocking. That's good. Adding support for Metal on OS X may not seem like a great user feature, but it'll speed up apps, creative-professional suites, and games alike. Fixing bugs isn't necessarily something to be shouted to the stratosphere, but if you're someone who's been bitten by those bugs, it can be a huge relief.

Feedback Assistant

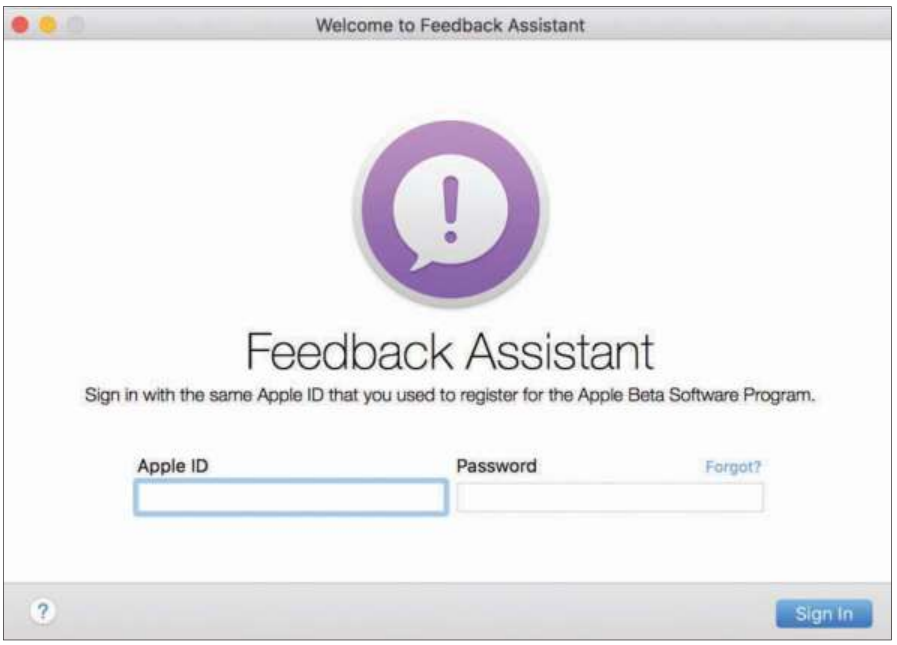
USE FEEDBACK ASSISTANT TO REPORT BUGS IN THE BETAS OF EL CAPITAN AND iOS 9

By Roman Loyola

Considering the problems it can cause for some users, why does Apple release public betas of its operating systems? Because there's only so much that can be done in a development lab – bug testing needs to be done on a large scale.

If you're ready and willing to use Apple's beta operating systems, that's great – you get to try out the newest features. However, remember what the purpose of the beta is for, and let Apple know what went wrong.

On the El Capitan public beta, you report issues through the Feedback Assistant app, and iOS 9 has a Feedback app too. When you install one of these betas, the app installs automatically, and El Capitan's Feedback Assistant app even auto-launches as a reminder to file reports. If you're unfamiliar with Feedback Assistant, this article will walk you through the steps of using it.



El Capitan

To launch Feedback Assistant, go to /Applications/Utilities. You'll find an alias of it there. It actually resides in /System/Library/CoreServices/Applications, but there's no need to navigate there when you can just use the alias.

Once you launch Feedback Assistant and continue past the intro screen, you need to log in using your Apple ID (see above). It needs to be the same ID you used to register for the Apple Beta Software Program.

After you register, you'll see an interface that looks a lot like the Notes 4 UI in El Capitan (see top-left screen). To report an issue, click on the New Feedback button icon button next to the search bar in the second pane, or click the New Feedback button in the viewing pane (if you have no feedback selected or have selected the welcome message), or type ⌘-N, or select *File → New Feedback* (see top-right screen).

When you create a new feedback report, you have to fill out a form. Click on the Help button on the lower-left corner (the '?' icon) for guidance on how to fill out the form. You can even file reports for the iOS 9 and Yosemite betas by clicking on Change in the upper right and selecting the OS you want.

Don't be afraid to be detailed in your report. Write the specific steps you took to produce the problem. Note down any error messages. It's more important to explain your experience than to try and provide your own diagnosis on why

there's an issue. And don't think that someone else has probably already filed a similar report; multiple reports of the same issue can help raise awareness for the operating system developers.

Once you've filled out the report and clicked Continue, you can add any files that may help the developer, like screenshots. Feedback Assistant will attach a system profile and a compressed folder of diagnostic files.

In the final screen, you can review your report. Click Submit when you're done.

iOS 9

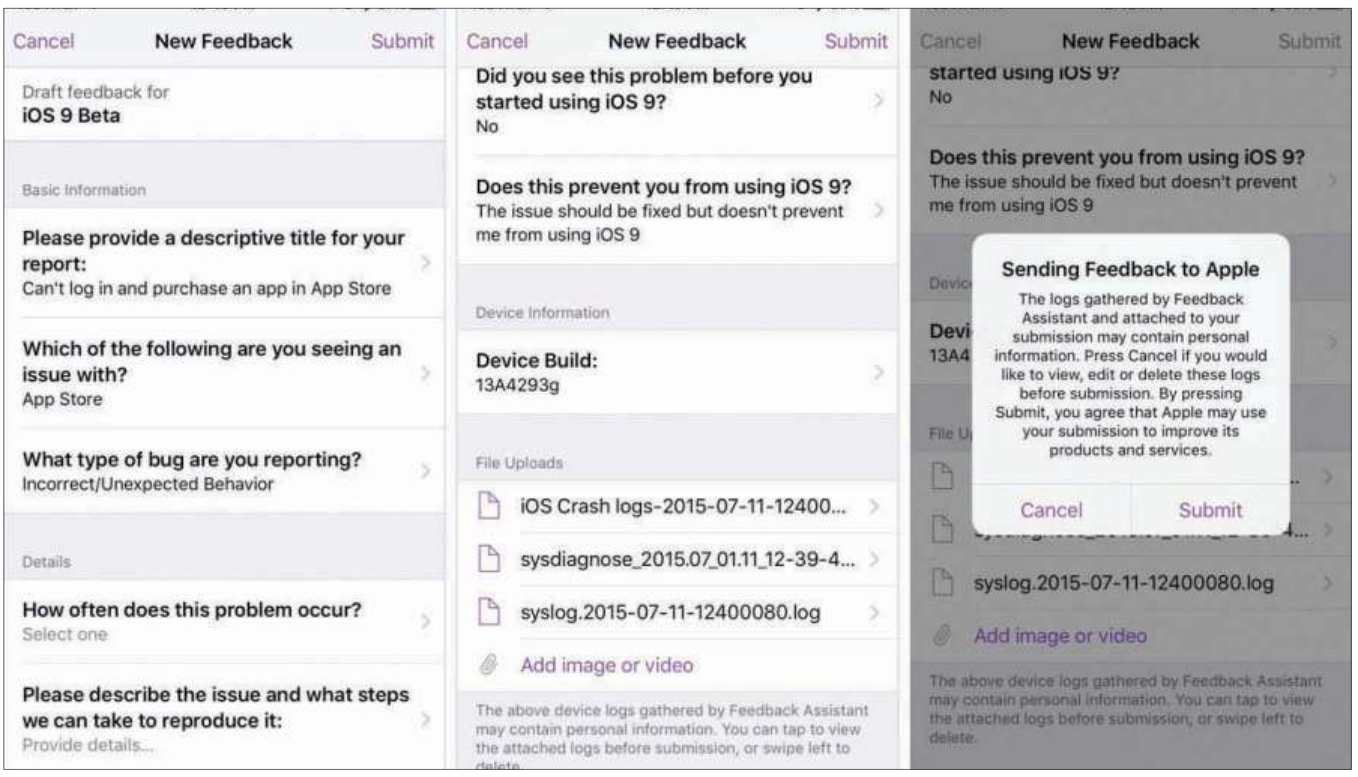
Before reporting a bug in iOS 9, take a few steps to see if the problem can be reproduced. Say you're having trouble tapping the tabs in the Twitter app. Try force-quitting the app and relaunching it to see if that helps. Ditto with restarting your phone. It might not help, but at least you'll be able to say in your report what fixes you tried.

If the problem is with a third-party app, check the App Store's Updates tab to see if there's an update for the app in question. After all, there's no point submitting feedback for a bug that's already been fixed. You can submit a screenshot with your report, so if the bug is visual, go ahead and snap some proof.

The Feedback app is pretty bare-bones, opening to a Feedback Assistant screen with the same kinds of folders you'd see in an email app: Inbox, Drafts, and Submitted. To start a new report, click New Feedback, or the compose button in the top-right.

Then you're basically just filling out a form. Be descriptive and thorough as you answer each question. Don't just call it 'Bug' or 'Crash.' Instead, flesh it out a little to something like, "Apple Store app crashes on launch."

At the end of the form, you'll get a chance to add a screenshot or video, and you can click the crash log attachments to give Apple's engineers a more complete picture of what happened. After a reminder that the logs are being attached, you'll tap Submit in the upper-right. Then pat yourself on the back for doing your duty as a beta tester.



Revert back to Yosemite

IF YOU THINK YOU'VE MADE A MISTAKE UPGRADING TO EL CAPITAN BETA, HERE'S HOW TO RETURN BACK TO YOSEMITE

By Karen Haslam

El Capitan

Was installing the El Capitan beta on your Mac a big mistake? Have you had a change of heart and want to go back to Yosemite? Here's how to revert back from El Capitan

What you can't and can do

Before you start there are a couple of things that you can't do. First off, it's not possible to boot your Mac into Recovery mode and revert to Yosemite because this method can only be used for reinstalling the system that's currently on the Mac, which in this case is El Capitan. Secondly, you can't run the Yosemite installer within El Capitan, because the Mac always wants to have the latest version of OS X.

What you can do is erase the beta of El Capitan, reinstall Yosemite, and then restore your original pre-El Capitan data from the Time Machine back up you made before you downloaded the beta. Before you start, make a back up of any new files you'd recently added in El Capitan and store them on a hard drive (not the one you are about to use to create the installer though). Don't make a Time Machine backup either – the only Time Machine backup should be your backup of Yosemite before you updated to El Capitan.

Create a Yosemite install drive

Before you remove El Capitan from your Mac, create a Yosemite installation drive. To do so, download the Yosemite installer from the App Store. It may already be in your Purchases section, if it's not there search the App Store. Click on the Download button. After the installer downloads it will auto-launch. You'll need to quit the installer at this point as you won't be able to install it on top of El Capitan.

At this stage, you need to create a bootable installer on a separate hard drive. You'll need at least 8GB of storage available on an external drive, that is formatted with a GUID Partition Table, on which to put the installer – it's not just a case of copying it over though, you should make a bootable OS X Yosemite install drive. Using a bootable installer drive is necessary because you need to erase the drive on your Mac (including

You'll need at least 8GB of storage available on an external drive, that is formatted with a GUID Partition Table, on which to put the installer

all traces of El Capitan) before installing Yosemite. This way you can do a clean install of the OS and restore any data you have in your backup.

There are a few ways in which you can create that installer. You can use the installer's built-in createinstallmedia tool; use Disk Utility; or perform the Disk Utility procedure using Terminal.

The Createinstallmedia method is the simplest, and doesn't require you to be competent in Terminal – even the Disk Utility method requires a couple of Terminal commands. However, you will need to open up Terminal to use it.

To use Createinstallmedia, you'll first need to connect your Mac to the properly formatted 8GB hard drive. Rename the drive Untitled. (Make sure there is no data on the drive as it is going to be erased.) Make sure that the Yosemite installer (Install OS X Yosemite.app) is in the correct location in the main Applications folder. Next, launch Terminal and paste in this command:

```
sudo /Applications/Install\
OS\ X\ Yosemite.app/Contents/
Resources/createinstallmedia
--volume /Volumes/Untitled
--applicationpath /
Applications/Install\ OS\ X\
Yosemite.app --nointeraction
```

Enter your admin password when required. You will see the progress in the Terminal window, it could take half an hour. Eventually you will see the words: Copy Complete. Done.

You now have your bootable Yosemite install drive ready to recover your Mac from the grip of El Capitan.

Remove the El Capitan beta

Now you have your Bootable Installer, and have backed up any new files, you can safely erase the El Capitan volume. You'll have to erase it before you can install Yosemite again.

To boot from that Bootable Installer and wipe El Capitan from your Mac, you'll need to shut down your Mac and connect the drive to your Mac. Hold down the Alt key at startup and when you see the drive icon labelled Install OS X Yosemite, click on the arrow below it to start the install. Next, select Disk Utility when the OS X Utilities window appears. When the Disk Utility app launches, choose your Mac's hard drive and click on the Erase tab. Name your hard drive and select one of the OS X Extended formats. Click Erase and wipe your hard drive.

Install Yosemite from a Bootable Installer

Once your Mac has been wiped you can install the Yosemite from your Bootable Installer. To do so, you'll first need to quit Disk Utility. Next, select Install OS X, click Continue, and follow the installation process. Assuming you made that backup before you installed El Capitan you can now connect to your Time Machine drive and run Migration Assistant to restore all your files from the back up. Finally, any extra data you had created since installing El Capitan, and had backed up (not using Time Machine) can be restored.

Split View

WHY THE NEW FULL PAGE VIEW IN EL CAPITAN HAS POTENTIAL

By Jason Snell

One of the more interesting features of OS X El Capitan is the new Split View, which lets you run two apps side by side without any distractions. It's sort of like full-screen mode, except with two apps.

I've never been a huge fan of Full Screen Mode, but adding a second app to Full Screen Mode gives the feature an extra dimension that makes it much more intriguing to me. It's not just that the new feature allows Full Screen Mode to now encompass all of the tasks I perform by switching between two apps. It's also that, at least on my 27in Retina iMac, it's a waste of space.

To bring Split View to El Capitan, Apple has modified Full Screen Mode so that it can display two apps at once. Technically, it makes sense. OS X already has one weird mode where apps disappear from the normal desktop metaphor, so why not just extend the capabilities of that mode?

The problem is that some of the underlying assumptions of Full Screen Mode can't be made in Split View, and that leads to some weird interface issues in the El Capitan public beta.

Most of the issues seem to be around the concept of which app is active. On the normal Mac desktop, you can tell which app is active by shading cues and by the name of the app in the left corner of the menu bar, right next to the Apple logo. In El Capitan, Full Screen Mode is capable of running two apps at once.

When I was writing my first look at the El Capitan public beta, I used Split View to read Apple's PDF reviewers guide in Preview while taking notes in Notes. Neither app displayed a traditional window title bar or toolbar unless I moved my cursor to the top of the screen. As a result, the only way I could tell that Notes was the active app was when I would see an insertion cursor blinking in my note.

Apps behave differently when they're active and not, a distinction that becomes more important in Split View. When I was taking notes in Notes, I was also scrolling through the PDF in Preview. Mac apps are happy to let you scroll through their content when they're not active – just move your cursor over the content you'd like to scroll, put two fingers on your trackpad, and there it goes.

However, other behaviours aren't allowed when an app isn't active. If I wanted to zoom in on something in the PDF I was scrolling through, I couldn't do it unless I clicked somewhere first. That click would make Preview active and then I could zoom and scroll.

The version of Split View coming in iOS 9 doesn't suffer this problem, mostly because there's no abstract pointing device on iOS. When you're touching a window to zoom in, you're touching it – it becomes active immediately. But when I move my Mac cursor over a window in an app that's not active, I can scroll (but not zoom) without ever 'touching' it by clicking. Slightly different metaphor, and a very different experience.

I'm not sure what the solution is here, or if there is one. Since you can scroll content even when an app isn't front most, maybe Apple needs to extend that functionality to cover other gestures. Maybe apps that support Full Screen Mode need to be modified to deal with the fact that they may now be sharing space with other applications.

I still believe that Split View is going to be a productivity benefit to many Mac users. But it's interesting to see how adding a new wrinkle to a long-standing OS feature can lead to some unintended and weird consequences. Here's hoping most of these wrinkles are ironed out before El Capitan arrives in the autumn.

Safari 9

LITTLE CHANGES COMING IN EL CAPITAN

By Roman Loyola

Safari's major overhaul occurred when Yosemite was released last year. By comparison, the changes in El Capitan are just a few, but they will have an immediate effect on how you browse the web.

Safari tab mute

This feature alone is worth upgrading to El Capitan. Whenever you're in Safari, there's a very good chance that you have multiple tabs open. And many websites auto-play media, so you can end up with sound coming from a tab you aren't currently looking at. The problem is trying to find which tab the sound is coming from so you can mute the audio.

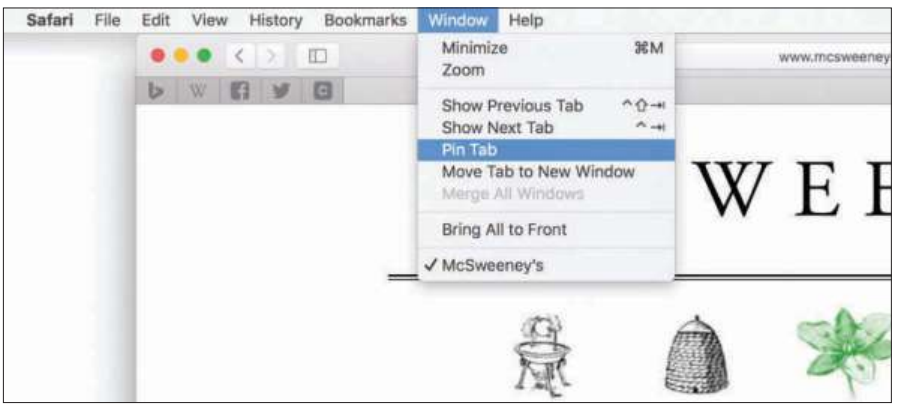
In Safari 9, tabs with audio playing show a sound icon in the tab. This makes it easy to spot where the audio is coming from, but Apple goes a bit further. Click the sound icon and it mutes that tab.

If you click and hold on the sound icon, a contextual menu appears, and you have the option to mute all of the other tabs in Safari. If you're watching a video on one page and audio starts playing from another, you can use the contextual menu on the current page to mute the others.

Pinned Sites

We all have websites that we visit all the time. Pinned sites give you a quick way to get to those sites with fresh content.

Pinning a site is very easy. Go to the site you want to pin, and then select *Window* ➔ *Pin Tab*. The site's icon will appear on the left side of the Tab bar. To remove a Pinned Site, click on the pinned icon to open the page, and then select *Window* ➔ *Unpin Tab*.



The Pinned Site that's currently showing in the browser will have a colour icon, while the other icons are greyed out.

What makes Pinned Sites different from using a bookmark in the Favorites Bar is that Pinned Sites are updated in the background, so they'll always have the latest content.

AirPlay

With Google's Chromecast, you can stream web video in Chrome on a Mac to a Chromecast-equipped TV. It works easily. AirPlay support in Safari 9 brings this feature to the Apple TV. Compatible videos will show an AirPlay icon; click on it, select an Apple TV, and the video in Safari will play on the TV, without your having to mirror your Mac's entire screen.

Responsive Design Mode and other Develop tools

Most people don't activate Safari's Develop menu. It's for web developers, so it would confuse most users. It does offer interesting and useful tools, and you can activate it in Safari's preferences; there's a checkbox to show the Develop menu in *Preferences* ➔ *Advanced*.

The Develop menu in Safari 9 has a new selection called Responsive Design Mode that web developers and designers will love. When you activate it, you can use it to see how a site will look on different iOS devices and screen resolutions. Click on one of the settings at the top, and you'll see a preview of the site below. The Develop menu has two other new selections: Disable Cross-Origin Restrictions and Treat SHA-1 Certificates as Insecure.

Remapped keyboard shortcuts

Pressing ⌘-1, ⌘-2, ⌘-3, and so on, on the keyboard now corresponds to the tabs in the Tab bar instead of the bookmarks in the Favorites Bar – this includes any Pinned Sites. For example, if you have two Pinned Sites and one other web page open, pressing ⌘-1 opens the first Pinned Site, ⌘-2 opens the second Pinned Site, and ⌘-3 navigates to that web page.

The keyboard shortcuts for the Favorites Bar are still available, but now it's ⌘-Alt-1, ⌘-Alt-2, ⌘-Alt-3, and so on.

Partition a hard drive

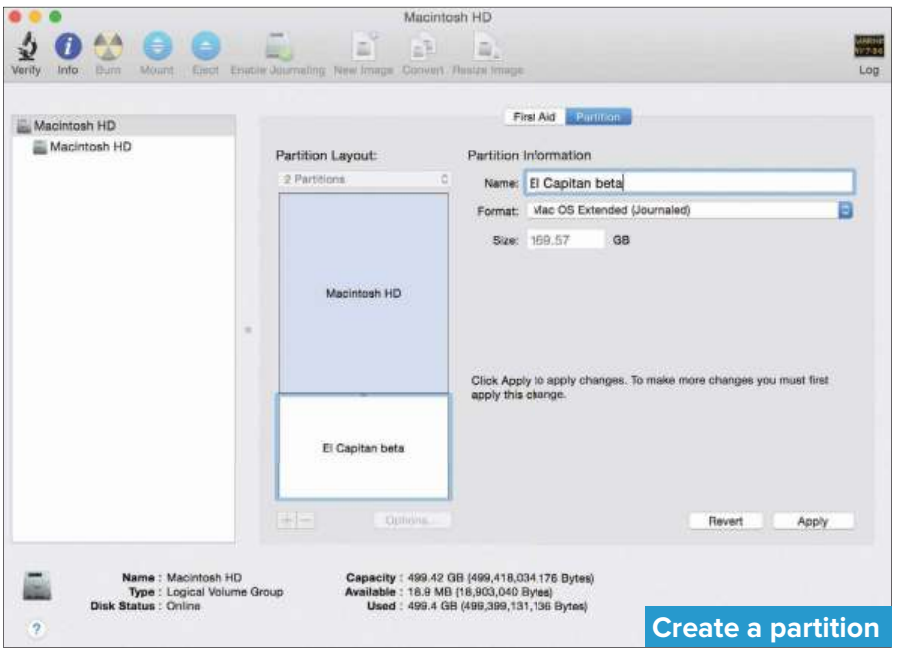
THINKING OF INSTALLING THE OS X EL CAPITAN BETA OR WINDOWS 10? HERE'S HOW TO PARTITION YOUR MAC'S HARD DRIVE

By Kenny Hemphill

Partitioning a hard drive, or an SSD drive, involves creating multiple volumes from one physical storage medium. The volumes appear separately in the Finder and are treated separately by your Mac. You can format them independently and use them for different purposes.

You may not know it, but your Mac's boot drive, assuming it's a recent model, is already partitioned. Modern Macs ship with a hidden partition, which hosts OS X's Recovery System, a set of first aid tools and an installer that allows to re-install the OS X on your boot disk if you're unable to boot from it.

There are occasions, however, when you'll want to create another partition, and here we'll show you how.



Create a partition

Why partition your Mac?

There are several reasons why you might want to partition your Mac's hard drive. Historically, the most common was to separate the Mac's system files from the volume on which data was stored. Since OS X came along, with its preference for keeping data in your Home folder, that's much less common.

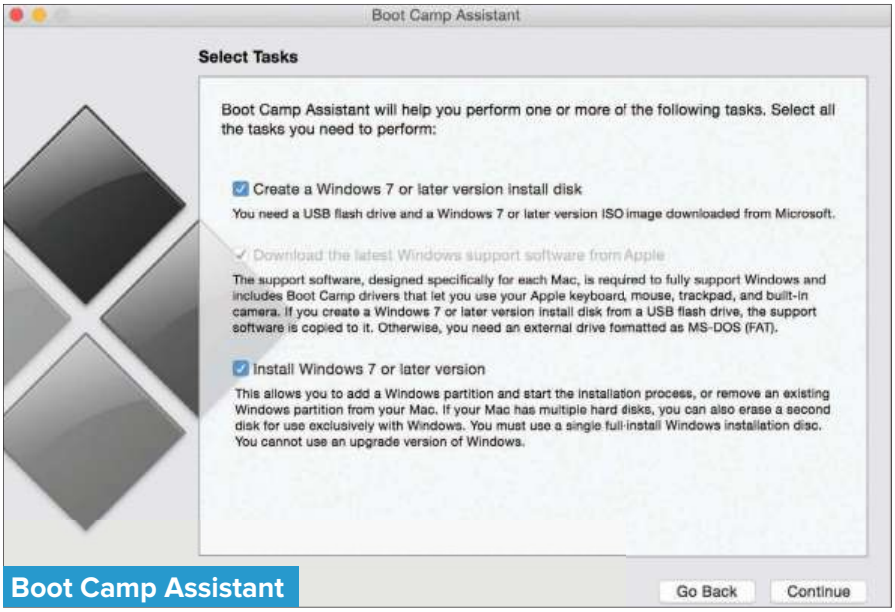
Now it's more likely that you'll partition a drive in order to run multiple operating systems, or multiple versions of the same operating system, from a single disk. That's how Boot Camp works, by partitioning the drive and allowing you to install Windows on the other partition.

You could also partition your hard drive to allow you to use Time Machine to back your boot partition to a different partition on the same disk. To do this, however, the Time Machine partition has to be at least twice the size of the volume you want to back up, leaving you less than half the total disk capacity to work with. In addition, storing a back up on the same disk as the one being backed up carries several risks and should only be done as a convenient method of restoring older versions of data. Your real backup should always be on a separate disk.

Another reason you might want to partition your Mac is to run the new public beta of OS X El Capitan.

How to partition your Mac

If you plan to use Boot Camp, you should run Boot Camp Assistant and follow the instructions to partition the drive and prepare for an installation of another OS. For other uses, Disk Utility is free and will



Boot Camp Assistant

do the job. Before you start, you should back-up the drive you intend to partition. Better still, clone it using a tool like Carbon Copy Cloner. Assume the worst will happen and you'll lose all the data stored on the drive when you attempt to partition it. Make contingencies. A bootable clone will have you up and running again in no time.

Once you've cloned the drive and verified you can boot from it by restarting your Mac with the clone plugged in and selected as the Startup Disk in System Preferences, you're ready to begin the process of creating a new partition.

Unplug the disk with the clone on it and restart from your Mac's normal startup disk. When your Mac has restarted, press ⌘-Shift-U or select Utilities from the Go menu in the Finder. Double-click on Disk Utility.

In Disk Utility select your Mac's internal drive, making sure to click on the drive and not the volume beneath it. You should see two tabs below the toolbar: First Aid and Partition. Click Partition.

Click the '+' below Partition Layout to add another partition to the disk. You'll see the layout change to show the additional partition. You can now change the size of the partitions by dragging the line dividing them up or down, subject to a minimum size for the boot partition which is dependent on the data you currently have stored on it. When you've made them the size you want, click on the new partition and type a name for it in the 'Name:' box. Make sure the format is Mac OS X Extended (Journaled).

Once you've set the partition sizes and named the new partition, click Apply to finalise everything. Alternatively, if you change your mind or want to start again, click Revert instead.

Your Mac's main drive is now split into two volumes, with the new one empty. You can now install a different version of OS X on it, use it to install a beta of El Capitan, or keep it as a place to store data.

You can re-size the partitions at any time using the same process you used to create the new partition, but instead of clicking '+' just drag the partition bar up or down. The degree to which you can re-size will be dependent on the data stored on each partition.

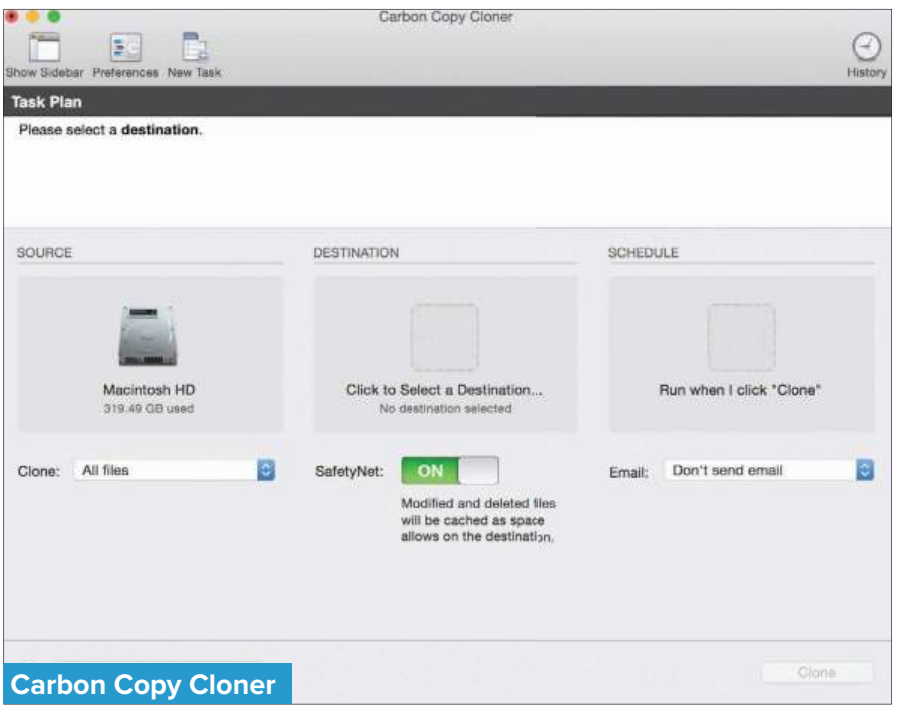
When you've created your new partition, you can install an operating system on it by double-clicking the disk image. Select the new partition as the location for the installation. Then follow the instructions to complete the installation. Once it's done you can reboot into the partition whenever you need to.

The risks

The only real risk when you partition your hard drive is data loss. You can mitigate this risk by backing up or cloning your disk before you start and whenever you re-size partitions.

The alternatives

If you don't want to partition your main disk, there are other ways you can safely run a different version of OS X. The simplest is to install it on an external hard drive, or even a USB stick. You can then boot from that, either by selecting it as the Startup Disk in System Preferences, or by holding down the Alt key during startup and selecting it when prompted.



Carbon Copy Cloner

Windows 10 on a Mac

USE BOOT CAMP OR A VIRTUAL MACHINE TO GET WINDOWS 10 ON A MAC

By Matt Egan and Nik Rawlinson

One of the key benefits of running a Mac is that you can enjoy the unique experience of having OS X *and* Windows on the same computer. In this feature we explain how to install and run Microsoft's latest operating system on your Mac.

Boot Camp or virtual machine?

As with running any non-OS X operating system on your Mac, there are two ways to get Windows 10. Your first option is to install the OS on a separate partition of your hard drive using the built-in Boot Camp. Thus you can boot your OS X device directly into Windows 10, as if it was a Windows PC. Alternatively, you can run Windows as a virtual machine inside an OS X program.

In general, we recommend using Boot Camp to dual boot your Mac, since performance is better. However, while Windows 10 Technical Preview was in beta we strongly recommended using a virtual machine, and with the new Windows still in its early days, we still recommend that path.

Download Windows 10 disc image

Any Mac since 2012 should be able to run Windows 10. First back up your Mac. Next, download the Windows 10 Disc Image. To get this, go to tinyurl.com/ozt8jjc and choose 64-bit download. The link will be valid for 24 hours. The installation file (ISO) will download into your Downloads folder. This part could take a few minutes.

Get Windows 10 for free

If you are installing the operating system for the first time, you will need a Windows product key (xxxxx-xxxxx-xxxxx-xxxxx-xxxxx). For more information about product keys and when they are required, visit Microsoft's FAQ page at tinyurl.com/nk9mndj. Windows 10 is free for most users, though you may have to pay if your version of Windows is older than 7. In that case a copy will cost around £99.

Using Boot Camp

Before you can begin, you'll need a USB drive with at least 16GB of free space to add the Windows 10 installer and the necessary Boot Camp files. Your Mac will also need at least 30GB of free drive space for the Windows partition. Boot Camp will take the Windows ISO file and create a boot disk that can be used to install Windows on your Mac.

Once you have downloaded the Windows 10 ISO, open the Boot Camp assistant. Tick the following boxes: Create a Windows 7 10 or later version install disk; and Install Windows 10. Insert the USB drive and select the Windows 10 .iso file via the Boot Camp Assistant. Boot Camp will copy the Windows 10 iso and all the Boot Camp drivers needed to run Microsoft's operating system to the USB stick. After some time your USB drive will become a Windows 10 boot disk.

The next step is crucial: you need to partition your hard drive. This means choosing how much storage to give to Windows 10, and take away from OS X. The recommended minimum is 20GB, but 30GB or more is better. Windows 10 the OS itself will take up a lot of space. Hand over as much as you can afford.

Once you have set the required space, click Install. Windows 10 will start to install. As this is happening you will see Windows restart a few times. Things are working well if after a while you hit the 'We're getting our apps ready' screen. Don't worry if this is onscreen for 15 minutes or so. Once the process is finished your Mac will reboot. It should reboot into Windows 10 so you can see the Windows set up screen, but it isn't a problem if it reboots to OS X. Regardless, whenever you reboot, if you hold the Alt key you'll see a menu from which you can select which operating system to launch.

Next, enter your product key and select your Windows Boot Camp partition to install Window on. Follow the installation process. Once installed the Mac will boot into Windows 10. Finally, you'll need to install the Boot Camp drivers that are on the USB stick. Locate them and run setup.exe to install them. You'll now have Windows 10 on your Mac.

Virtual Machine

Your second option, and the one we recommend since its still early days for Windows 10 is to use a virtual machine. The first step is to get your hands on a virtualization product. Luckily that part doesn't have to cost you anything. VirtualBox is a free download from tinyurl.com/5vgw4mp. Opt for the latest edition by clicking the 'amd64' link beside VirtualBox 5.0 for OS X Hosts in the VirtualBox binaries section at the top of the page. Once the disk image has downloaded, locate it on your Mac, mount it and double-click the VirtualBox.pkg file to install the program.

You'll need 175MB of free space on your computer to accommodate it, in addition to the space required by Windows (up to 32GB). When the installation completes, launch VirtualBox from your Applications folder.

Download your copy of Windows 10 from tinyurl.com/ozt8jjc and put it somewhere convenient, so you can access it from within the VirtualBox installer. We used the pre-release beta edition, but the process will be the same with the shipping code.

Click the New button on the VirtualBox toolbar and give your new virtual machine a name and select the operating system you're installing from the Version drop-down menu. Click Continue.

When Windows is up and running it will behave like a separate computer from the rest of your Mac, which will continue to run OS X. To do this it needs to 'borrow' resources from your Mac, which your Mac won't be able to touch while the virtual machine is running. The most important of these is memory.

VirtualBox suggests 2GB (2048MB) on our machine (a Mac mini with 16GB RAM), but we're going to increase this to 4GB (4096MB) to give Windows some room to breathe. If you want to do the same, use the slider and then click Continue.

When you set up a virtual machine, not only the operating system but also the applications running on it and the files created and edited in it are stored in a bundle, which your Mac will see as a virtual hard drive. This is convenient as it means you won't get your Windows and OS X assets mixed up, but it also means that you'll put a large chunk of your disk out of reach of OS X. For this reason we're going to stick with VirtualBox's conservative recommendation of a 32GB virtual disk for Windows.

When you click Continue you'll be asked what kind of drive you want to create. Stick with VDI (VirtualBox Disk Image) unless you're going to use this installation of Windows with a different virtualization application, such as Parallels Desktop.

VirtualBox can either take away the 32GB immediately or take it piecemeal as and when required by increasing the size of the Windows drive over time as your files and range of installed apps grows.

It makes sense to opt for the latter, so unless you have any particular reason for giving up the full amount right away, leave the storage option set to Dynamically allocated and click Continue. You've now created your new virtual machine – all you need to do now is install Windows on it. VirtualBox now shows you a summary of the composition of your virtual machine, and allows you to switch between different virtualised environments in the sidebar if you have set up more than one. Click Start to begin the Windows installation process.

We've stored our installation download on an SD card in the slot on the back of our Mac mini. We need to tell VirtualBox where this is, so we click the folder icon on the screen that popped up when we clicked Start and select the ISO file on the card. Clicking Open returns us to the setup screen where we click Start to open the disk image and use it as the installation media.

Once you've selected your language, the installer needs to know whether you're upgrading an old version or opting for a Custom install. Pick Custom, as you're setting up a brand new virtual machine and then, on the following screen, make sure Drive 0 is selected as the installation drive.

The virtual machine will reboot a couple of times during the installation before asking you to set up your preferences. You can opt for Express Settings, which accepts all of Microsoft's defaults, including automatically installing updates when they become available.

If you don't want to do this, click the Customise button and tweak the settings by hand. Next, you need to tell Windows whether the machine belongs to yourself or your organisation. Only you know the right answer here, but if you're a home or small business user, the chances are the second option is the most appropriate. Click Next, then enter your Microsoft account details to log in. If you don't have an account, click Create one.

The final two steps ask if you'd rather use a PIN that in place of a password, and whether you want to store your files on OneDrive or the local virtual machine. When you've decided what you want to do in each instance, Windows reboots one last time before presenting your with the desktop. You're now ready to use the OS on your Mac.

Guide to System Preferences

PART FOUR OF OUR GUIDE TO SYSTEM PREFERENCES

By Craig Grannell

This is the fourth part of our ongoing guide to System Preferences – you can find the other parts in our previous issues. You can download the Newsstand version of these from tinyurl.com/pevjevb. Here we look at parental controls, dictation and speech, and more.

Parental controls

Parental controls

This System Preferences pane is for restricting accounts. Although it's primarily designed to limit a child's access to certain apps, the web, or the entire Mac, its various options have scope for wider use, for example with the guest account.

You'll need to click the lock and enter admin details to make any edits inside Parental Controls. Prior to working on an account, you can optionally check 'Manage parental controls from another computer'. This makes it possible to define any given Mac's parental control settings from the Parental Controls System Preferences pane on another Mac, assuming you have relevant admin details for the remote computer.

From the sidebar, you can then select the Guest User account or any standard accounts on the Mac. Admin accounts cannot have parental controls assigned to them. If other networked computers allow controls to be managed remotely, they will be listed below the current computer's accounts.

Using the '+' and '-' buttons at the foot of the sidebar, you can add a new account or remove an existing one, just like in Users & Groups. The cog button provides access to a menu for turning parental controls on/off for the current account, copying its settings, or pasting previously copied settings.

On selecting an account, you will see five tabs: Apps, Web, People, Time Limits and Other.

Apps starts off with a checkbox to enable Simple Finder for the selected account. This disables windows in Finder, and only allows access to apps you define within this pane. The Dock is restricted to three folders: My Applications; Documents; Shared. A user can only switch to the full version of Finder via Finder ➔ Run Full Finder when armed with admin details.

'Limit Applications', when active, provides the means to restrict the selected account's access to apps. Mac App Store apps can be limited to those up to a specific age (or blocked entirely). The collapsible menus within 'Allowed Apps' enables you to fine-tune access to widgets and third-party apps installed from other sources. At the foot of the pane is a checkbox that prevents the Dock being modified, which is greyed out if Simple Finder is activated.

Next up is Web, which defines website access restrictions. 'Allow unrestricted access to websites' makes no changes at the system level. 'Try to limit access to adult websites automatically' attempts to

do what its description says, and enables you to use 'Customize...' to always allow or never allow specific sites. You should note that automated filters are problematic, and often end up with false positives while letting many sites through the net. For younger children, supervise their web-browsing sessions, or make use of 'Allow access on to only these websites', which blocks anything not on the list below. This is predefined with a number of safe sites, but you can remove any of them and/or add your own.

The third tab is People, which is looks at how the user interacts with others online. The first two boxes, which are prechecked, allow the user to join Game Center multiplayer games and add Game Center friends. Below this are checkboxes for Mail and Messages, all unchecked by default.

With 'Limit Mail to allowed contacts' and 'Limit Messages to allowed contacts', you restrict the user to contacting (via these services) only the addresses you add to 'Allowed Contacts'. Click the '+' button to open a sheet for adding contacts and use the downwards-facing arrow to grab a contact from information in your Contacts app, or add details manually. Back in the pane, the 'Send requests to' checkbox and field provide the means to have someone contacted when the account's user tries contacting anyone not on this approved list.

Your next option is labelled Time Limits and is used to define access to the Mac as a whole. Using the checkboxes, separate usage limits can be set for weekdays (Monday through Friday) and weekends (Saturday and Sunday), and these are initially, respectively, three- and five hours. Thirty minutes is the minimum setting for both, and eight hours is the maximum. With the Bedtime checkboxes, you can prevent access during defined hours for 'School nights' (Sunday night through Thursday night) and 'Weekend' (Friday night and Saturday night).

Finally, Other is a grab-bag of functions and features you can turn on or off, depending on the user and your own preferences. 'Disable built-in camera' prevents the user accessing built-in cameras and also cameras in connected displays, but not those connected via USB. 'Disable Dictation' blocks enabling Dictation in the Dictation & Speech System Preferences pane. 'Hide profanity in Dictionary' is one for the purists, blocking so-called 'inappropriate' content in the Dictionary app.

App Store

If 'Limit printer administration' is on, the user cannot adjust printer settings. With 'Disable changing the password', the user's blocked from changing their password in Users & Groups. And 'Limit CD and DVD burning' stops the user burning a CD or DVD – as if any kids would want to do that these days anyway.

Finally, the Logs button opens a sheet that details website visits, blocked websites, apps used and messages activity. Activity can be shown for 'today', 'all', or time periods ranging from a week to a year. Data can be grouped by kind or date. Entries can be opened or blocked using the sheet's buttons.

App Store

This pane determines the behaviour of apps you've installed from the Mac App Store. If you're not using an admin account, you'll need to click the lock to make any changes.

Within the pane are six checkboxes. 'Automatically check for updates' does what it describes, and when active enables you to turn on or off the next four checkboxes. The first downloads newly available updates in the background (keep this on unless you're somewhere with a data cap, in which case temporarily disable it). The next three are for installing app updates, OS X updates, and system data files/security updates.

The other checkbox is for automatically downloading apps purchased on other Macs. This is useful if you use the same apps across a range of Macs, but again beware of bandwidth considerations and also storage if you happen to work with apps that take up a large amount of space. At the foot of the window you'll see when the most recent check for updates was made, and a button to 'Check Now'. If the Mac knows updates are available, you'll get a 'Show Updates' button, which loads the Updates tab of the App Store app.

Dictation and Speech

The Mac might not (yet) have Siri, but it has some voice capabilities, so you can speak to the computer and it to you.

Under the 'Dictation' tab, you select an input source from the small menu underneath the microphone icon. Said icon provides an indication of the input level, but you're better off fine-tuning that in the 'Input' tab of the Sound pane.

The 'Dictation' radio button is for turning dictation on and off. The first time you turn it on, Apple warns that the speech you input is sent to Apple, in order to be converted to text. Click 'Enable Dictation' to continue. If you're not thrilled about this from a privacy standpoint, click 'Use Enhanced Dictation'. This will begin a hefty download (over 400MB on our test

machine); but when it's done, dictation will work offline, won't send your text to Apple, and you'll have the benefit of live feedback as you speak.

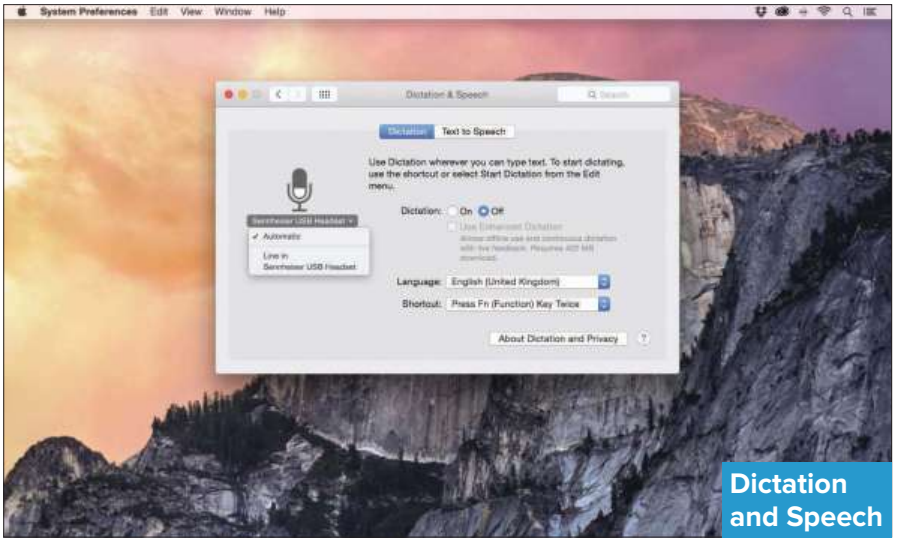
There are two menus below: 'Language' and 'Shortcut'. With 'Language', you select the dictation language you'd like to use. You can add more by selecting 'Add Language...' and choosing from the options in the sheet that appears, though note that each may lead to another download. 'Shortcut' enables you to define the keyboard shortcut to trigger dictation inside an app. By default, you press 'Fn' twice, but there are other modifier-based options, or you can define a custom shortcut. A button at the foot of the pane provides some more information about how the feature aligns with Apple's stance on privacy.

When dictation is active, a little microphone pop-up appears and you can start talking. If you're using enhanced dictation, words will appear roughly as you speak. If not, you'll have to occasionally pause to allow your text to upload, get translated and then download to your Mac.

While dictation accuracy isn't perfect, you can improve your resulting text by manually stating punctuation and styles (such as 'comma' and 'new paragraph'); rather oddly, the system understands 'smiley face' and 'frowny face', too. You can also use the keyboard to edit text while you speak.

Using your shortcut again will turn off dictation, or you can click the Done button on the pop-up.

Under 'Text to Speech', you can choose settings for having your Mac read back text to you. Under the 'System Voice' menu, choose a voice, or select 'Customize...' to download a new voice. Note that OS X has plenty of variants for some languages. For example, you can download male and female French voices, but there are separate Canadian French options. For English, there's a massive range to choose from, including voices with American, British, Australian and Indian accents. Back in the main pane, use the 'Speaking Rate' slider to determine the rate of speech and click the 'Play' button to preview.



Dictation and Speech

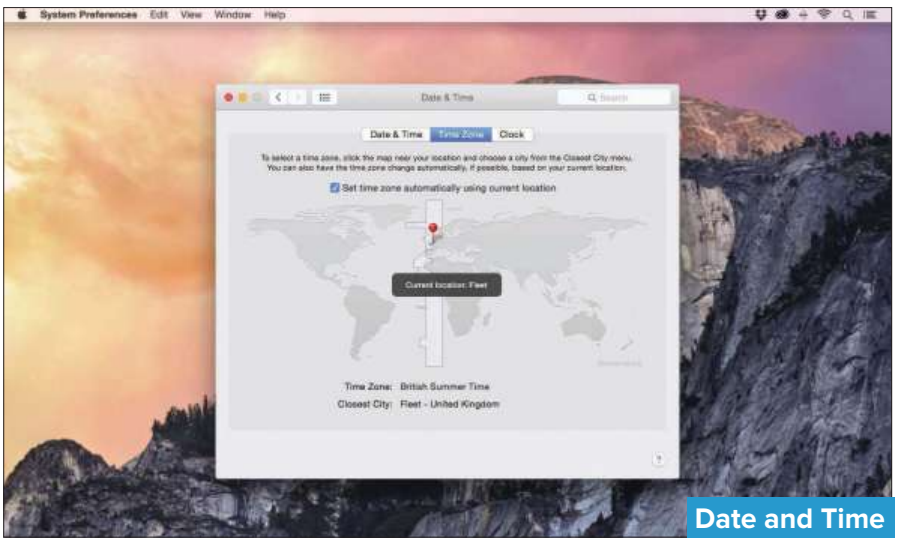
Below, check 'Announce when alerts are displayed' if you want your Mac to speak alerts. 'Set Alert Options...' enables you to define a specific voice for alerts, a phrase to begin the alert with, and how long the system waits before yelling at you. The next checkbox, 'Speak selected text...' allows you to create a shortcut for speaking selected text. Click 'Change Key...' if you want to change this from the default, taking care not to pick a shortcut that may clash with others in applications you use. (Alt+§ is a good bet.)

In most applications, pressing the shortcut will result in your Mac speaking from the start of the current text field/document if nothing is already selected. Select a piece of text and only that will be read back. Press the shortcut a second time and your Mac will be silenced. The text-to-speech system is extremely handy for proofing text, since it's easy to miss errors when reading but they tend to stick out when spoken to you.

The final two buttons provide the means to have the clock announce the time, and to jump to the Accessibility pane to adjust VoiceOver settings.

Date and Time

The Date & Time pane is where you adjust your clock, date and time zone. Under the 'Date & Time' tab, you'll see a calendar and clock, above which is a checkbox. If the checkbox is ticked, your Mac's time and date will be set automatically, using the Apple server selected in the menu. If you want to override this, untick the checkbox and use the menus to change the time and date settings. A button at the bottom of the pane sends you to the Language &



Date and Time

Region pane, for amending date and time formats across your system.

Under 'Time Zone', you get a world map and an outline of your currently selected time zone. If the checkbox in this tab is selected, your time zone will be chosen automatically, based on your current location. Again, this can be overridden – untick the checkbox and tap a point on the map. OS X will estimate the location. If you want to fine-tune it, type a place into the 'Closest City' field.

Most of what you find in the 'Clock' tab is for adding the date and time to the menu bar. Turn on the clock by ticking 'Show date and time in menu bar' and use the radio buttons below to choose between digital and analogue options. The latter is small and not especially clear when in the menu bar; when selected, it also greys out all subsequent menu-bar clock options. The digital clock has more settings, enabling you to display seconds, flash the time separators, and use a 24- or 12-hour clock. If you decide on a 12-hour clock, you can optionally show AM/PM indicators.

OS X allows you to add the day and date to the digital clock, using the checkboxes to the right of 'Date options'. The day is shown in abbreviated form – for example, 'Fri' for Friday; and the date is also abbreviated, to the likes of '17 Dec'. The final option is 'Announce the time', which is done hourly, half-hourly, or every 15 minutes. Using 'Customize Voice...', you choose a voice, speed and volume level for this feature.

The Startup Disk

Using Startup Disk, you can determine the disk used to startup your Mac. What 'disk' means in practice is a partition, drive or volume with a viable operating system installed. You can also use this pane to restart your Mac in Target Disk mode, which effectively turns it into an external drive that can be connected to another Mac, whereupon you can copy across data and perform diagnostics and disk repairs.

On opening the pane, your Mac will locate and display disks that are potential candidates for restarting from. You'll see the name of each disk, and the operating system installed; standard OS X icons will differentiate between local and externally connected disks. Hold the cursor over any icon and you will also see the build number of the relevant operating system.

In the displayed image, the Mac in question has an internal drive partitioned in two, on to which two different versions of OS X are installed. An external backup drive from an archive is also connected, which has on it an older version of OS X. In any case, selecting one of these and clicking Restart will cause the Mac to attempt to startup from that disk. (Note that if you're not signed into an Administrator account, you will need to unlock the pane to make changes and startup from another disk.)

Having started up from another disk, be mindful it's like using an entirely separate Mac. If you're using an old back-up/clone, Save dialogs will default to that disk and not your 'standard' one; additionally, systems on external drives may have significantly longer startup times than you're used to and be relatively sluggish to respond, due to the throughput speed from the hardware they're housed on. However, starting up from external disks can be useful. For example, you can use software or an old set-up that's no longer supported by the current version of OS X; alternatively, if your main disk dies and gets replaced, you can startup from a backup/clone and copy its contents back to your Mac.

Should you need to, it's also possible to change your startup disk during your Mac's boot process, rather than using the Startup Disk pane in System Preferences. To do so, hold the Alt key as soon as you turn on/restart. The Mac will scan for connected drives and present you with a list of options. Select one (use the cursor or left/right keys and Return) and the Mac will start from that disk.

The other option in the pane itself is clicking the Target Disk Mode button. Do so having connected your Mac to another via Thunderbolt or FireWire and it will, as previously noted, effectively become an external drive. If the Mac has a display, it will show the Thunderbolt or FireWire symbol. Target disk mode can also be triggered during startup/restarts by holding the 'T' key.

Next month: Download next month's issue from tinyurl.com/pevjevb for the next instalment of our guide.

Startup Disk

MacBook buying guide

WE HELP YOU FIND THE RIGHT MAC LAPTOP FOR YOUR NEEDS

By Karen Haslam

MacBook Air

There are four different models of laptop in Apple's line-up: the MacBook Air, MacBook Pro, MacBook Pro with Retina display, and new for 2015 the Retina MacBook. Further still, each of those laptops is available in different sizes and configurations, with various build-to-order options. It's not surprising, then, that many people have difficulty deciding between them.

Here, we're helping you make that decision by examining the options and providing expert advice about which MacBook is best for you. First, let's take a look at what's on offer.

MacBook Air

Four configurations of MacBook Air are available. Two have an 11in display, while the other two come with a 13in screen. Each size offers 128- and 256GB of flash storage and a 1.6GHz processor. Until recently, it was Apple's most portable laptop, however, the new MacBook has now taken that position. The 11in model is still ideal for anyone who travels a lot.

Retina MacBook Pro

When it comes to the Retina MacBook Pro, there are a total of five models to choose from, three of which have 13in screens, while the remaining two have 15in displays.

Thanks to its higher specs, it's more powerful than the MacBook Air, and the display is also a significantly higher resolution. Internally, each of the Retina MacBook Pros is different, but we'll come to that later.

MacBook Pro

There's just one version of the non-Retina MacBook Pro, with a 13in display and 2.5GHz processor. It's also the last Apple laptop to come with an optical drive.

If you are thinking of opting for this MacBook, you should note that it hasn't been updated since 2012. Because of this we think it is more likely that it will soon disappear from Apple's line-up.

One thing to consider if you work with large files, as many creative professionals do, is the capacity of the storage inside the Mac

MacBook Pro

MacBook

Last, but certainly not least, of Apple's laptops is the 12in MacBook with Retina display. It was introduced in April of this year and is available in Gold, Silver or Space Grey, just like the iPhone. Colour choices aside, there are two models to choose from, either 1.1GHz and 1.2GHz.

As we said earlier this is the lightest, and perhaps most stylish Mac available. It's also one of the most expensive, and low powered to boot.

Number of MacBook models

That brings the grand total of Mac laptops to 12. However, there are also build-to-order options, so you can put together the Mac laptop of your dreams at the checkout if you order online.

Portability

The new 12in MacBook is Apple's lightest and thinnest laptop, with a height of 3.5- to 13.1mm and a weight of 920g. Sacrifices have, however, been made in terms of power, this being the tech giant's lowest specified computer. It's also one of the most expensive Macs, so not one for the budget conscious.

Next up is the 11in MacBook Air, with a height of 3- to 17mm and a weight of 1.08kg. We still think this system is ideal for carrying around with you on business trips or in your bag on the way to work.

Both these Macs could be slightly limiting due to their diminutive screen size. The 11in MacBook is the more limiting of the two, though. The actual display size of the smallest MacBook Air is 11.6in, which is just 1.9in bigger (diagonally) than the iPad Air. Some people find the dimensions of the MacBook Air screen restrictive too, because it is shallower than any other Mac due to it being 16:9 rather than 16:10, which is a more normal laptop screen aspect ratio.

The 12in MacBook has a bigger screen than the Air, plus it offers a much better quality display, more on that later.

We think that the best Mac for portability is the 13in MacBook Air. Yes, it's bigger and heavier than both of the Macs mentioned (its the same 3- to 17mm dimensions as the 11in model, but is wider at 325mm rather than 300mm). But at 1.35kg, it is not a lot heavier than the 11in model, and it is lighter than the 13in MacBook Pro (1.58kg). The price of the 13in Air is a lot better than that of the MacBook too, starting at £849 rather than £1,049. You get the best of both worlds, a light laptop with a decent screen size.

Battery life

The battery life of the 13in MacBook Air is the highest of any of Apple's laptops. The tech giant calls it an "all-day battery", which in real terms means up to 12 hours, and a whopping 30 days standby time.

Next up is the 13in Retina MacBook Pro, which can manage 10 hours wireless web (and Apple claims 12 hours if you are just watching video in iTunes).

The MacBook, 11in MacBook Air, and the 15in MacBook Pro with Retina display all offer nine hours of battery life for wireless web (10 hours for iTunes on the MacBook and Air, while the MacBook Pro offers nine hours of iTunes).

Finally, the older non-Retina MacBook Pro offers just seven hours of wireless web browsing.

Storage

One thing to consider if you work with large files, as many creative professionals do, is the capacity of the storage inside the Mac. Two types of storage are available: flash (also known as SSD) or a traditional hard drive.

You will find SSD options of 256GB and 512GB for the Retina MacBook Pro, 128- and 256GB for the MacBook Air, and 256- and 512GB for the Retina MacBook.

There are also build-to-order options, including 1TB flash storage on the top of

MacBook Pro with Retina display

the range Retina MacBook Pro (it'll set you back a cool £400 in addition to the £1,999 the machine already costs).

We think that buying a separate hard drive and plugging it in when necessary (or using network attached storage) is a better, and cheaper, solution.

The only Mac laptop to offer a hard drive is the older non-Retina MacBook Pro – this model comes with a 500GB hard drive. The hard drive in this Mac is far slower than the flash drives in the other MacBooks. We would advise anyone buying a Mac to look at a flash drive option.

Speed

As Apple's fastest Mac laptop, the 2.5GHz quad-core MacBook Pro may be a good choice if you are looking for the fastest Mac. There's even a build-to-order option of a 2.8GHz quad-core. The quad-core processor in the 15in MacBook Pro means it has double the processor power of the other dual core Macs. This is likely to make a real difference to processor intensive work. It's the most pricey option, though. If you think you want the most speed you can get for your money, find the build-to-order option within your budget that offers the fastest processor.

How to chose the best Mac laptop for your needs

To figure out which MacBook will best suit your needs, you'll need to think about what's most important. Are you looking for a MacBook to take with you on business trips? Perhaps you're after a gaming machine, or you're a student who needs a MacBook for university. Here, we take you through the options.

Productivity

You'll get iWork for free when you buy any new Mac laptop, which means you'll be able to use Apple's Pages, Numbers and Keynote applications. There has been some research that suggests that the bigger the screen the more productive you will be, so it might be best to opt for a 15in MacBook Pro to maximise the effect of the extra screen space.

> If you're a graphic designer, video editor or photographer, then the likelihood is you'll benefit from a bigger display and a more powerful Mac

Graphics intensive applications

If you want to use your MacBook for more powerful tasks, such as running creative applications, then the MacBook Air or MacBook may not be the best option.

If you're a graphic designer, video editor or photographer, then the likelihood is you'll benefit from a bigger display and a more powerful Mac. There's no longer a 17in MacBook Pro option, but there are two 15in MacBook Pro with Retina display models available.

The first has a 2.2GHz dual-core Intel Core i7 processor. It has 16GB 1600MHz memory and 256GB flash storage. The second has a 2.5GHz quad-core Intel Core i7 processor and 16GB or 1600MHz memory. It has 512GB of flash storage. The 2.5GHz model also has a discrete graphics card – the AMD Radeon R9 M370X – in addition to the Intel Iris Pro Graphics, where the other 15in has only the Intel Iris Pro Graphics. The MacBook Pro is able to switch in and out of the two graphics cards depending on the activity. If you are likely to need the best graphics on offer this will be the MacBook for you, but it comes at a high price – £1,999. Hopefully your work will stump up the cash for you.

The 2.2GHz MacBook Pro with Retina display isn't much cheaper either, and will set you back £1,599.

Gaming

The Mac is growing in popularity as a gaming machine, especially since the launch of the Mac App Store. Plus, the ability to install Windows via Boot Camp on a Mac means Mac gamers can run Windows games, too.

MacBook

(See how to get Windows 10 on a Mac on page 22.)

If you want to buy a MacBook for gaming, then we'd recommend the (unfortunately most expensive) high-end MacBook Pro with Retina display. It's got AMD Radeon R9 M370X graphics card, which should enable it to provide the best performance out of all of the MacBooks available, and some Mac desktops.

However, even the Intel graphics in the 13in MacBook Pro models could be sufficient for your gaming needs. The Intel HD Graphics 6100 in the 13in model, and Intel Iris Pro Graphics in the 15in model are plenty fast enough for many of today's games.

Education

We'd suggest that students will have similar needs to business users. They'll want to be able to carry their MacBook to and from lectures, and probably won't need them to be hugely powerful.

In that case, we'd suggest the MacBook Air again. Take a look back at the advice we gave at the beginning of this article when discussing portability for more information.

However, it's worth noting that the MacBook Pro still has an optical drive, and, surprisingly, some universities still require work to be submitted on a CD or DVD. Apple does, however, sell an external optical drive for £65.

Budget conscious

If money is the deciding factor when it comes to buying a MacBook, then the cheapest model available is the 128GB 11in MacBook Air, which will set you back £749. At £100 more, you can get the 13in MacBook Air, and add another £50 to that and you can buy the Retina MacBook Pro for £999.

The MacBook Pro without Retina display costs £899, though we think that is too much to pay what is essentially a machine from 2012, it hasn't been updated since then.

It's also worth taking a look on Apple's refurbished store (tinyurl.com/oe97saL), which often has MacBooks available to buy at reduced prices. Apple puts the products in the refurbished store through vigorous testing, so you'll hardly know the difference between a refurbished Mac and a brand new one.

The cheapest MacBook we can see on the Apple refurbished store at time of writing is a June 2014 11in MacBook Air with 128GB flash storage, which has a saving of £130, making it £719.

Battery life tests

GO ALL DAY WITH APPLE'S MAC LAPTOPS

By Roman Loyola

Battery life is one of the most common concerns readers have when Apple, or indeed any manufacturer, releases a new laptop. After all, no-one wants to run out of power, and Apple uses batteries that are not user-replaceable.

I ran two different battery tests on the new MacBook, 13in MacBook Air and 13in Retina MacBook Pro. The first produced results that jibe with Apple's specification. The second produced results that fell short, but there are a lot of factors that influence how long a battery can last.

I used the following settings:

Screen brightness: Set to 75 percent
Automatically adjust brightness: Off
Wi-Fi: Off for the iTunes movie test
Notifications: Off

In Energy Saver system preference (Battery Tab), I used the following:

Put hard disks to sleep when possible: Checked
Slightly dim the display while on battery power: Unchecked
Enable Power Nap while on battery power: Unchecked
Turn display off after: Never

iTunes movie playback

The first test I ran was a looped playback of an HD video in iTunes. Apple's specs for iTunes movie playback are:

13in Retina MacBook Pro: Up to 12 hours
13in MacBook Air: Up to 12 hours
MacBook: Up to 10 hours

The MacBook was the only laptop that didn't meet its specification, and it was around 40 minutes short. Still, you're going to be able to watch several movies or maybe even a whole season of *Game of Thrones* on a transatlantic flight.

Peacekeeper web use

The Peacekeeper Universal Browser Test (tinyurl.com/86dehu4) has a battery-test component. I used it to test what Apple calls "wireless web" battery life.

Its specs for wireless web are:

13in Retina MacBook Pro: Up to 10 hours
13in MacBook Air: Up to 12 hours
MacBook: Up to 9 hours

The results for this test fell short of Apple's specifications, but to be fair, this test is different from the one the company runs. The tech giant says its wireless web tests involve "browsing 25 popular

websites," and the company doesn't get any more specific than that. Peacekeeper's primary purpose is to test web browser performance, so it has much more rigorous (tinyurl.com/otqwjye) tasks that involve rendering videos, 3D graphics, web-based games, and more. Peacekeeper just happens to let you run it on a loop so it acts as a battery test.

In real life, I've used each laptop for work during the day, and I've never had to worry about battery life. I spend a large amount of my day on the web, with periods using productivity apps.

With a new laptop, you'll find that it has more than enough battery life to get you through a workday. Of course, your mileage may vary based on what you do. If you're heavily into production and need to perform processor-intensive tasks, your battery life will be affected.

Macworld's verdict

Just how important are battery-life test results to the consumer? In recent history, I've consistently seen a new laptop battery exceed Apple's specification. The tech giant has also made great efforts to tell consumers that it believes battery life is important, so the company seems to be doing what it can to deliver long battery life. Apple's always going to make a laptop that can last a working day.

Keep in mind that as a battery ages, it doesn't last as long as it originally did. We won't stop looking at battery life, but perhaps the results from a new laptop battery aren't as important as the life you get from an older laptop battery.

Battery test:
iTunes movie playback

iTunes movie playback battery life results: 2015 Mac laptops

MEASURED IN HOURS:MINUTES. LONGER BARS ARE BETTER.

Battery test:
Peacekeeper web use

Peacekeeper battery life results: 2015 Mac laptops

MEASURED IN HOURS:MINUTES. LONGER BARS ARE BETTER.

History of Apple

THE FIRST PART OUR HISTORY OF APPLE BEGINS WITH A LOOK AT APPLE'S NOT SO HUMBLE BEGINNINGS, FOLLOW THE APPLE STORY WITH US...

By Nik Rawlinson

The third founder

The history of everyone's favourite start-up is a tech fairy tale of one garage, three friends and humble beginnings. But we're getting ahead of ourselves...

The two Steves – Jobs and Wozniak – may have been Apple's most visible founders, but where it not for their friend Ronald Wayne there might be no iPhone, iPad or iMac today. Jobs convinced him to take 10 percent of the company stock and act as an arbiter should he and Woz come to blows, but Wayne backed out 12 days later, selling a holding that today would be worth $72bn for just $500.

How Jobs met Woz

Jobs met Woz at the Homebrew Computer Club; a gathering of enthusiasts in a garage in California's Menlo Park. Woz had seen his first MITS Altair there – which today looks like little more than a box of lights and circuit boards – and was inspired by MITS' build-it-yourself approach (the Altair came as a kit) to make something simpler for the rest of us. You can see this philosophy shining through in Apple's products today.

So he produced the first computer with a typewriter-like keyboard and the ability to connect to a regular TV. Later christened the Apple I, it was the archetype of every modern computer, but Wozniak wasn't trying to change the world with what he'd produced – he just wanted to show off how much he'd managed to do with so few resources. Speaking to NPR in 2006, he explained that, "when I built this Apple I... the first computer to say a computer should look like a typewriter – it should have a keyboard – and the output device is a television set, it wasn't really to show the world [that] here is the direction [it] should go [in]. It was to really show the people around me, to boast, to be clever, to get acknowledgement for having designed a very inexpensive computer."

It almost didn't happen, though. The Woz we know now has a larger than life personality – he's funded rock concerts and shimmied on *Dancing with the Stars* – but, as he told the *Sydney Morning Herald*, "I was shy and felt that I knew little about the newest developments in computers." He came close to ducking out altogether, and giving the Club a miss.

Let's be thankful he didn't. Jobs saw the computer, recognised its brilliance, and sold his VW microbus to help fund its production. Wozniak sold his HP calculator, and together they founded Apple Computer Inc on 1 April 1976, alongside Ronald Wayne.

Inspiration for the name

The name was to cause Apple problems in later years as it came close to the Beatles' publisher, Apple Corps, but its genesis was innocent enough. Speaking to *Byte* magazine in December 1984, Woz credited Jobs with the idea. "He was working from time to time in the orchards up in Oregon. I thought that it might be because there were apples in the orchard or maybe just its fructarian nature. Maybe the word just happened to occur to him. In any case, we both tried to come up with better names but neither one of us could think of anything better after Apple was mentioned."

Selling the Apple I

Woz built each computer by hand, and although he'd wanted to sell them for little more than the cost of their parts – at a price at that would recoup their outlay if

Apple I

they shipped 50 units – Jobs had bigger ideas. He priced the Apple I at $666.66, and inked a deal with the Byte Shop in Mountain View to supply it with 50 computers at $500 each. Byte Shop was going out on a limb: the Apple I didn't exist in any great number, and the nascent Apple Computer Inc didn't have the resources to fulfil the order. Nor could it get them. Atari, where Jobs worked, wanted cash for any components it sold him, a bank turned him down for a loan, and although he had an offer of $5,000 from a friend's father, it wasn't enough. In the end, it was Byte Shop's purchase order that sealed the deal. Jobs took it to Cramer Electronics and, as Walter Isaacson explains in *Steve Jobs: The Exclusive Biography*, he convinced Cramer's manager to call Paul Terrell, owner of Byte Shop, to verify the order.

"Terrell was at a conference when he heard over a loudspeaker that he had an emergency call. The Cramer manager told him that two scruffy kids had just walked in waving an order from the Byte Shop. Was it real? Terrell confirmed that it was, and the store agreed to front Jobs the parts on 30-day credit."

Jobs was banking on producing enough working computers within that time to settle the bill out of the proceeds from selling completed units to Byte Shop. The risk involved was too great for Ronald Wayne, and it's ultimately this that saw him duck out.

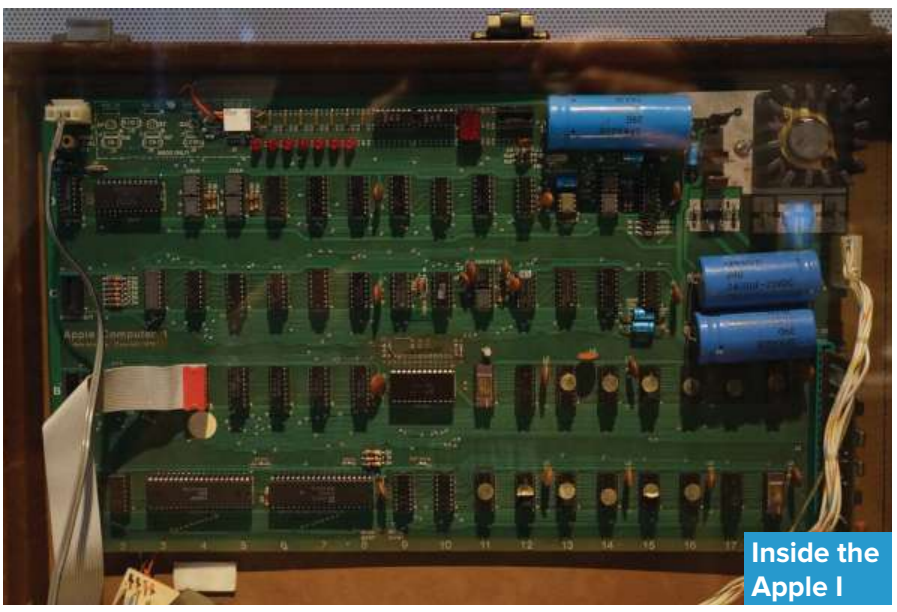
"Jobs and Woz didn't have two nickels to rub together," Wayne told NextShark in 2013. "If this thing blew up, how was that... going to be repaid? Did they have the money? No. Was I reachable? Yes."

Family and friends were roped in to sit at a kitchen table and help solder the parts, and once they'd been tested Jobs drove them over to Byte Shop. When he unpacked them, Terrell, who had ordered finished computers, was surprised by what he found. As Michael Moritz explains in *Return to the Little Kingdom*, "Some energetic intervention was required before the boards could be made to do anything. Terrell couldn't even test the board without buying two transformers... Since the Apple didn't have a keyboard or a television, no data could be funnelled in or out of the computer. Once a keyboard had been hooked to the machine it still couldn't be programmed without somebody laboriously typing in the code for BASIC, since Wozniak and Jobs hadn't provided the language on a cassette tape or in a ROM chip... finally the computer was naked. It had no case."

Raspberry Pi and the BBC's Micro Bit aside, we probably wouldn't accept such a computer today, and even Terrell was reluctant at first but, as Isaacson explains, "Jobs stared him down, and he agreed to take delivery and pay." The gamble had paid off, and the Apple I stayed in production from April 1976 until September 1977, with a total run of around 200 units. Their scarcity has made them collectors' items, and Bonhams auctioned a working Apple I in October 2014 for an eye-watering $905,000.

If your pockets aren't that deep, Briel Computers' Replica 1 Plus is a hardware clone of the Apple I, and ships at a far more affordable $199, fully built. When you consider only 200 were built, the Apple I was a triumph. It powered its parent company to almost unheard of rates of growth – so much so that the decision to build a successor can't have caused too many sleepless nights in the Jobs and Wozniak households.

Next month: We'll continue looking at the history of Apple with the debut of the Apple II. You can download the Newsstand version of the magazine from tinyurl.com/pevjevb.


Inside the Apple I

Guide to Photos for Mac

IN THE FIRST PART OF OUR GUIDE TO PHOTOS FOR MAC, WE LOOK AT HOW TO ORGANISE IMAGES, FACIAL RECOGNITION AND MORE

By Keir Thomas

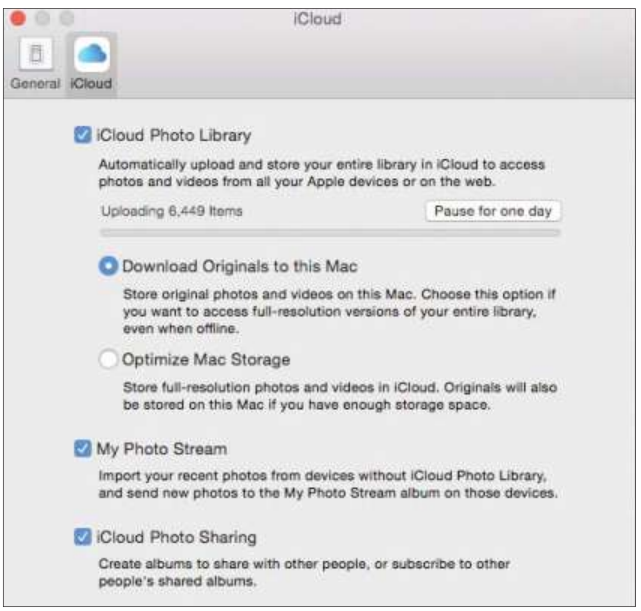
What is Photos for OS X?

The goal of the Photos app is twofold. First, to bring to your Mac the same simple yet powerful photo management experience that we're all used to on the iPhone, iPad or iPod touch, not only in functionality but also in terminology – Photos understands HDR, for example, and applies an icon label to each of the HDR versions of your snapshots. Photos also brings to your Mac iCloud Photo Library, which syncs your snapshots harmoniously and invisibly via the cloud.

Secondly, to make Photos a reality, Apple has killed-off not only its iPhoto line but also the enthusiast/pro-level Aperture app. You can still keep these installed alongside Photos but they're banished from sale via the Mac App Store and won't be updated with new features.

Photos also brings photo management fully into line with recent OS X innovations, such as the Share Sheet system that lets you share items with your Facebook, Twitter or photo sharing services such as Flickr, via the share button at the top right. Options on this list are setup system-wide via the Internet Accounts icon within System Preferences.

Uploading your existing snapshots to iCloud Photo Library is likely to take a very long time.



Convert your library from iPhoto or Aperture to Photos

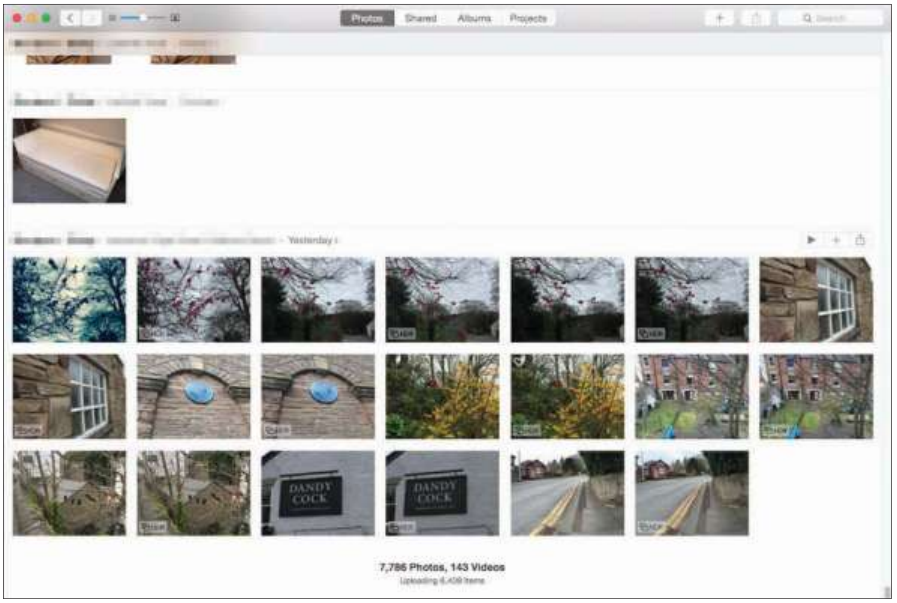
When you start Photos for the first time, it will ask if it should convert your existing photo library from iPhoto or Aperture. If in doubt, choose the iPhoto option because there's a good chance that Aperture was also using this photo library if you'd used iPhoto prior to installing it.

Converting simply makes your existing library Photos compatible, while retaining backwards compatibility with the older apps, although should you subsequently use iPhoto or Aperture to edit or add photos then this won't be synced to the Photos app. In other words, from this point onwards it's best to avoid iPhoto or Aperture.

Conversion takes a few minutes to complete during which you'll see a progress display. If you choose not to convert there, then don't worry because holding down the Alt key when starting Photos lets you switch to and subsequently convert other libraries. However, right now there doesn't appear to be any way to merge your various older libraries into a consolidated whole.

Should you use iCloud Photo Library?

Although Photo Streams still stick around, Photos will next ask whether you want to also use iCloud Photo Library. If you decide to make the switch, you may need to enable the identical option within the Photos and Camera section of the



Photos interface splits into four main views: Photos, Shared, Albums and Projects.

Settings app of your iOS devices, too. iCloud Photo Library simply stores all your photos online, regardless of how you come about them. They might be new pictures you take with your iPhone, or photos you import from a dedicated camera via the Photos app on your Mac. It's kind of like a backup of your entire photo library, combined with ease of access from any of your Apple hardware.

Should you select to use iCloud Photo Library, Photos will attempt to sync all the photos in your existing library. Unless you only ever take photos at birthdays and weddings, you're probably going to have to upgrade your iCloud storage to make space, and Photos will prompt you to do so if needed. On our test setup, we had to upgrade to the £2.99 per month 200GB option, for example. This is only the cost of a cup of coffee every month but, whatever your needs, it's extremely unlikely you'll be able to use iCloud Photo Library without paying Apple a monthly subscription.

Note that syncing your entire library with iCloud Photo Library when you setup Photos is likely to take a very long time, especially considering nearly all UK users have slow upload speeds as part of their broadband packages. Put it this way: we used Photos for the first time a week ago and it's still syncing. Additionally, on our test MacBook Pro setup the machine frequently got hot enough for the fans to spin wildly. The iCloud section of Photos' preferences dialog box offers an syncing progress display, as well as the option to pause uploading for a day if you have to do other urgent things via your internet connection. When the Photos tab is selected you'll also see an upload count at the bottom of the photos listing.

How to use Photos on the Mac

So, assuming Photos has converted your existing photos library and you've configured iCloud Photo Library, let's take a look at Photo's main interface.

Running along the top is a thin toolbar that always stays put, although its options might change depending on which of the tabs you have selected, as follows.

Photos: This lists your photos by the time they were taken, with the newest at the bottom of the list. They're further organised by location: if you took some photos across an afternoon within the same general location, then Photos will bunch them together in one group.

Shared: Here you can view any photo streams you've shared or that have been shared with you. However, creating a new shared album or adding photos to an existing stream isn't handled here. Instead, you must select the photos in either Album or Photos view, then click the Share button at the top right of the program window, before selecting iCloud Photo Sharing.

Albums: You can create your own private albums in which to organise photos, including Smart Albums that automatically contain images based on certain criteria such as the camera used, or location. Just click the '+' button on the toolbar when this tab is selected. However, Photos also comes with several ready-made albums that organise photos according certain characteristics. Of particular interest is the All Photos album, that lets you see all your photos listed from old to new, without any kind of organisation, as with the Photos tab.

Projects: Here you can view any photobooks, calendars, cards or collections of prints you've created, all of which can be ordered direct from Apple by clicking the '+' icon on the toolbar and selecting from the menu. Any slideshows you create also appear here, although you can create impromptu slideshows of pictures by selecting them and clicking the Play button on the toolbar.

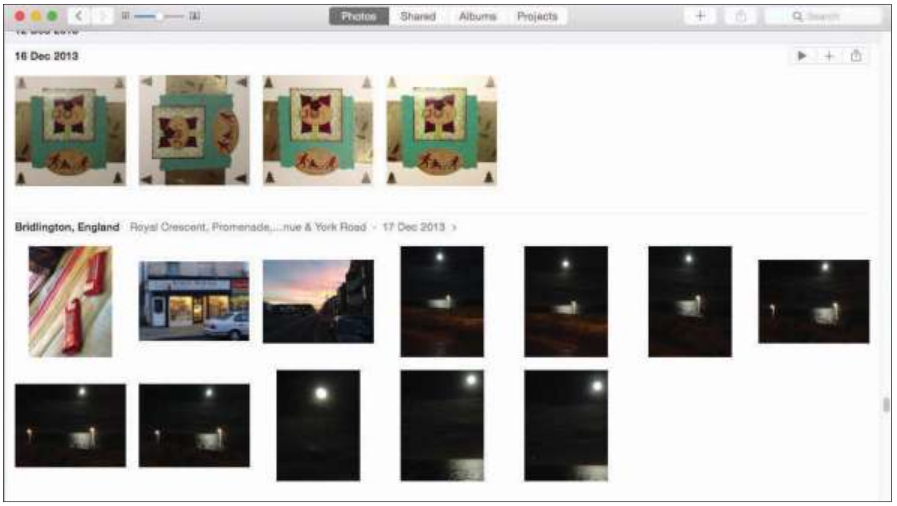
The Photos tab

The Photos tab gives an eagle's eye view of your entire library split into the same Years, Collections and Moments groupings as with the iOS Photos app. There's no mention of these terms anywhere within Photos on the Mac, however, and that's perhaps for a good reason because they can be confusing. However, the concept behind them isn't.

The Years view provides the big picture and arranges your photos into yearly timelines, including a label indicating broadly where they were taken – England, for example, and/or perhaps Portugal if you took photos on holiday.

If you aren't in the Year view already, click the back button at the top left of the toolbar until it greys out to switch to viewing Years.

Click anywhere on a Year and you'll zoom into one of many Collections, which cluster your photos by much smaller timelines, and also places. A Collection might group together a series of photos



The Moment view of your photos breaks them down into groups according to individual dates and the location where the photos were taken.

taken during one week in which you visited Cornwall. The Collection will be labelled by date and location.

Click anywhere on a Collection and you'll zoom into one of many Moments. These split out photos into smaller groups according to individual dates, split further by location. A single Moment might show the evening you spent at a particular restaurant near Lands End, for example, and again the date will be shown along with GPS details, such as the street the restaurant was on.

How to view a photo

When viewing a Moment, you can double-click on any photo to open it for full-screen viewing (and editing, of course), or click the heart icon at the top left of the thumbnail to mark it as one of your favourites. This simply means it gets added to the Favourites album under the Albums view. Hitting Space also opens the currently selected photo for viewing.

When viewing a moment, you can click the toolbar button at the right of the back/forward buttons to show a side panel thumbnail view showing other photos in that Moment. This is referred to as Split View, and it can be resized by dragging the bar alongside the thumbnails.

Shared Albums

The Shared tab lets you tune into any Photo Streams you've created on your iPhone or iPad, or any Photo Streams that you've joined that were created by somebody else. You can also create them within Photos on the Mac. However, once again the terminology varies compared to iOS. Photo Streams are now referred to as Shared Albums.

Double-clicking any Shared Album will open it for viewing, and double-clicking any image will open it for full-screen viewing. However, you won't be able to edit it until you import it into your library. Photos will offer to do so if you try, or if it's already been imported then you'll be prompted to switch to the imported version.

This means you will have to reimport the edited version into the Shared Album after you've finished your work if you want it to be seen by others. How this is done is little clumsy – after clicking the Done button when you've finished editing, click the Share button at the right of the toolbar. Then select iCloud Photo Stream, and select the Shared Album.

This is also how you create a new Shared Album from scratch – select the photos in one of Photos' view modes in the usual way by elastic-band selecting, or using Shift/⌘ to select multiple items, and then click the Share button and *iCloud Photo Sharing* ➜ *New Shared Album*. You'll then be invited to fill-in details, including invitees.

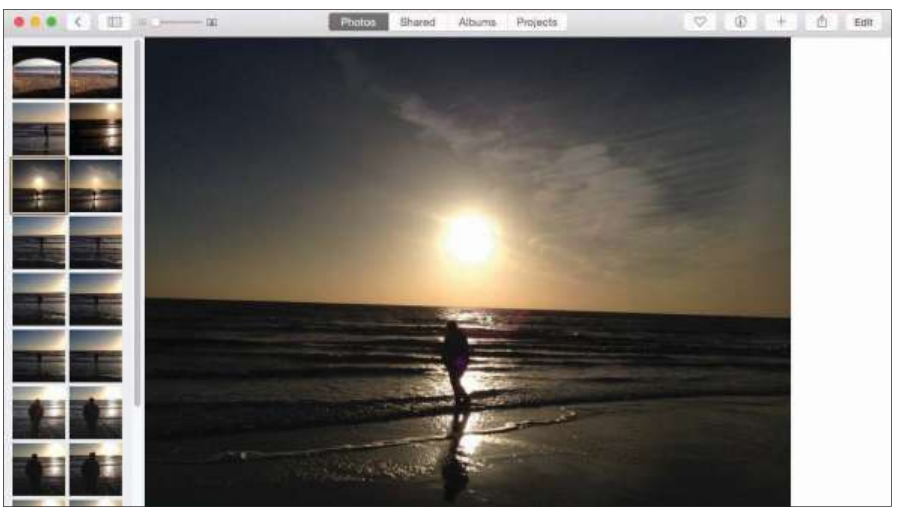
To add photos to an existing Shared Album, again select them and either click the Share button and follow the instructions earlier, or switch to the Shared Album in question and click the Add Photos and Videos link.

Organising Albums

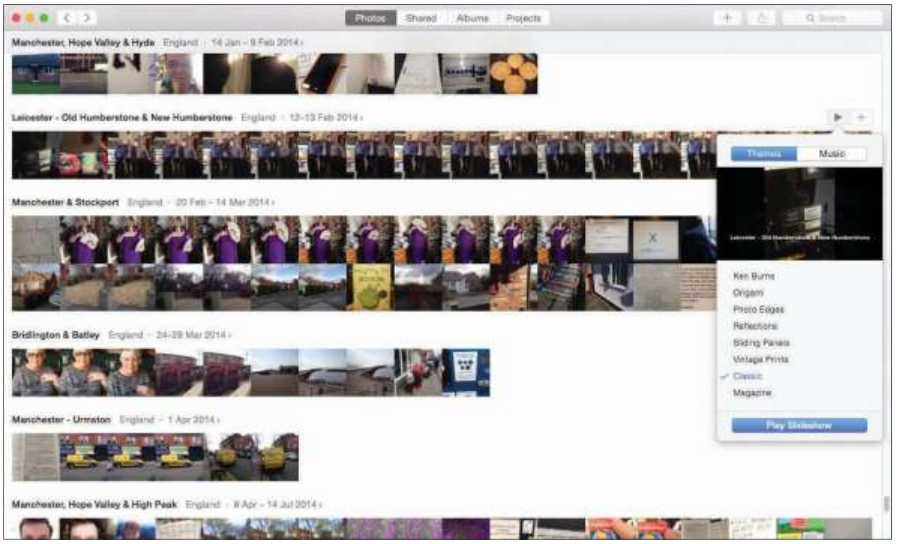
To organise your photos outside of the date/location ordering of the main Photos view, you can create an album. These are viewed by selecting the Albums tab.

Notably, albums are virtual. In other words, it's not like copying a file from one place to another. It's more like creating an alias. This means a photo can be used in several albums, for example, and deleting an album won't delete the photos in it.

To create an album, select the photos in either Photos or Shared views, and click the Add button, before selecting Album from the drop-down list.



Clicking the Split View button lets you view thumbnails at the left, and a full-screen photo display at the right.



Ad hoc slideshows can be created from Moments by clicking the play button on the floating toolbar at the right of each.

Photos contains a handful of ready-made albums managed by the app itself. As you might expect, All Photos lists all your photos, from oldest to newest, in order but without the location ordering present in the Photos view. Faces splits photos into groupings according to facial recognition. Last Import shows which photos were imported last (but not including those automatically added to your library via iCloud Photo Library). Favorites shows any photos you've marked as being favourites by clicking the heart icon at the top left of their thumbnails.

Panoramas, Videos, Slo-Mo, Time Lapse and Bursts show any photos in your library taken using the iPhone or iPad Camera app with those picture modes selected.

Folders can be created to hold multiple Albums but this option is only found on the File menu. Albums can be placed in folders (and removed from them) by dragging and dropping.

Smart Albums can also be created via the Add drop-down list, and let you create albums from photos in your library that match certain criteria, such as focal length or camera used to take them. This feature is virtually identical to the same feature in the older iPhoto.

Books, Calendar, Card, Slideshow and Prints

The Add drop-down list also includes options to create a Book, Calendar, Card, Slideshow and Prints. All but the Slideshow option involve ordering a physical artefact direct from Apple, and the process is similar to that of creating an Album as mentioned earlier – first select the photos you wish to be included via Photos or Album views, and then click the option you want from the Add menu. You'll then be walked through the process of creating the item, including agreeing to the price (orders are charged to your Apple ID in the same way as iTunes or App Store purchases).

Slideshows can in fact be created ad hoc and at any time by selecting photos and clicking the Play button either on the toolbar if viewing an Album, or at the right of a Collection. However, creating a slideshow from the Add menu allows you to not only create a slideshow for later playback, but also output it as a movie file in up to 1080p HD resolution – just click the Export button at the top right of the program window.

Navigate through photos

When using Photos view, the back and forward buttons on the toolbar don't always work like those in a browser. If you're viewing a Moment, then clicking the back button takes you to your Collections, and clicking it again will take you to the Years view. Similarly, clicking the Forward button will move you to your Collection, and clicking again will move to your Moments.

If other tabs are selected the back/forward buttons work more like traditional browser buttons – choose to view a shared photo stream, for example, and clicking back will take you to the complete listing of streams.

Hit the zoom button at the top left of the window, which makes the thumbnails larger or smaller, such as those in a Moment or album – but not when viewing Collections or Years, for reasons known best to Apple. If viewing a photo full-screen this will also let you zoom in and out.

Switching to Edit mode

To edit a photo, you'll first need to double-click its thumbnail to open it for viewing, and then click the Edit button at the top right. Note that if you open for editing a photo in a Shared Album, you'll be told it needs to be imported into your photo library first, and that imported photo will be the one you'll edit rather than the shared version.

Because every inch of screen space matters when you're editing photos, switching to full-screen mode makes sense (click *View* ➜ *Full Screen*, or the green icon next to the background arrows). The screen goes black to indicate Edit mode is activated and the toolkit appears at the right of the program window, while a zoom control appears at the top left. When zoomed you can navigate around the image by clicking and dragging, or via a two-fingered scroll if using a trackpad.

Non-destructive editing

Photos uses non-destructive editing, which means the original is always stored alongside your edits, no matter how extensive these are – or even if you quit the app after making them. Just open the photo for editing at any time and click Revert to Original.

You should note that undoing individual actions in Photos via Ctrl+Z, or *Edit* ➜ *Undo*, isn't quite the same as other apps. Undos when editing an image are limited to the current tool you're working in. For example, if you alter the brightness and then switch to the Retouch tool, you

The zoom control at the top left lets you look closely at an image, and clicking and dragging will scroll around.

won't be able to undo the brightness alterations you just made other than reverting to the original image as described above.

Enhance, rotate, crop, filter, adjust, & retouch

There are six icons in the toolkit at the right of the screen and you can see what they are by hovering the mouse cursor over each. Some work via a single click, while others open an additional set of tools. All are pretty simple to use, though.

Enhance: Auto-adjusts the colour balance, brightness and contrast of your image. You're not given control over this. To control brightness, contrast, colour, and so on, you'll need the Adjust tool.

Rotate: Turns the image counter-clockwise 90 degrees. Holding down the Alt key switches it so it rotates clockwise 90 degrees. It's not possible to flip the image vertically or horizontally here, although these options are available on the Image main menu and in the Crop tool, described below.

Crop: The least-accurately named of all the tools because, as well as dragging the frame to crop the image, this tool also lets you rotate the image to various small degrees – just click and drag the dial at the right of the image. You can also flip it and adjust it to fit particular aspect ratios such as 3:2 or simply 'square' by clicking the Flip or Aspect buttons at the bottom right. Adjusting the aspect ratio can help crop a photo slightly for printing via commercial photo printing outfits – the popular 6x4in print size is 3:2 ratio, for example, while a standard iPhone image is slightly larger at 16:9. The Auto button will attempt to automatically rotate and crop the image, so lines within it (horizons, poles, walls, and so on) look straight. On other types of images, such as portraits, it has no effect.

Filters: Various ready-made one-click filters that apply visual styles to your image, such as Mono, Instant, Chrome, and so on. Again, you have no control over any of them.

Adjust: The meat of the editing tools, and discussed in-depth next month.

Retouch: Known as the 'heal tool' in image editors like Photoshop, this lets you click (or click and drag over a wider area) to remove elements from an image such as skin blemishes. How it works is magical, as are the results, which are usually extremely impressive. However, if you find it doesn't work quite as it should, then holding down Alt and selecting a nearby point in the image for a sample will improve accuracy. Clicking the Reset button at the bottom of the screen undoes any edits you've made using the Retouch tool.

Make adjustments using Light, Colour, and Black and White

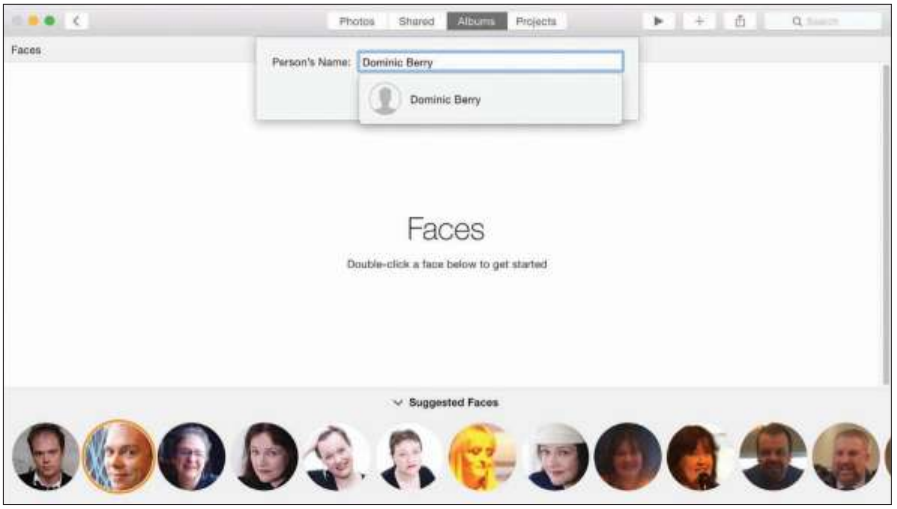
Clicking the Adjust tool opens a new set of controls alongside the image. By default three are shown: Light, Colour, and Black and White. Clicking and dragging the white bar within each control lets you make adjustments, although if you hover the mouse cursor over each you'll see an Auto button appear. This attempts to auto-adjust to the best settings based on the image data, as well as the Histogram graph shown above. Hovering the mouse cursor over the control also shows a down arrow that, when clicked, reveals more fine-grained options — under the Light slider you'll see additional sliders for Exposure, Highlights, Shadows and so on.

Clicking the Add button at the top right lets you reveal even more tools including some to sharpen the image, remove noise and add a vignette effect. Perhaps the most useful for those used to Aperture or other pro-level tools is the Levels tool. Drag the handles beneath the levels histogram to adjust the darkest, lightest and mid-points of the image.

Advanced editing tricks

Right-clicking on the image lets you copy to the clipboard the current set of edits you've made, and you can then paste them onto a different image in the same way by right-clicking. This is useful if you find yourself correcting many images with a similar low-light fault, for example.

Perhaps one of the best advanced tricks for using Photos is to hold down the Alt key while using any of the tools. Doing so while adjusting the cropping box will cause it to resize in a different way, for example, and doing so whilst adjusting the rotation dial will decrease the severity of your drag.



Select a thumbnail of an individual and type their name. If they're in your contacts book their name will appear automatically.

Getting started with facial recognition

Photos includes a handful of automatic tools that can organise your images and one of the most useful is facial recognition. Theoretically this feature is automatic in that Photos will create albums of people once you've told it who an individual is, but for best results it needs constant training and checking.

Facial recognition is accessed via the Faces album, which is accessible by clicking the Albums tab.

When the Faces album is opened for the first time you'll have to click the Get Started button. Subsequently circular thumbnails will appear along the bottom of the program window, showing a range of faces that Photos has spotted within your existing library. You'll need to tell Photos who each one is.

Training facial recognition

You'll probably need to return to this thumbnail listing in the future as you import new images, but right now just double-click one of the faces and then type their name in the dialog box that appears at the top of the Photos window. This dialog is tied into your contacts database and suggestions will appear automatically when you start typing, but if the individual isn't in your address book then just type their full name.

Once an individual has been identified in the way described above, further photos will appear showing images that Photos thinks are the same person. Photos is usually good at this but you should click any that aren't the person. This will unselect them. If there's any confusion – perhaps caused by the individual appearing blurrily in the background of an image – then hover the mouse cursor over the recognition circle surrounding their head and it'll temporarily enlarge. Click the Add and Continue button and you'll see yet more photos of that person. Keep going until either you get bored – in which case you can click the Finish Later button – or all the photos suggested for that individual have been recognised. Then move onto the next individual by clicking their thumbnail back in the Faces album view.

It can take quite a while to train Photos, and it's impossible to say how much is needed. In our tests after a few screens Photos had usually got somewhere near 95 percent accuracy.

Manually identifying a face

The Faces album isn't the only way to identify faces and there's a handful of more immediate methods for doing so. If you've just added a batch of images from your camera, or via iCloud Library, them open any photo for viewing by double-clicking it and either click *View ➜ Show Face Names*, or click the 'i' icon at the top right of the toolbar to open the Info window. Then click the Add Faces button.

Whichever method you choose, Photos will add a circle to where it thinks the face(s) are in the picture, and each can be expanded by dragging the handle at the right if they're too small. Underneath the recognition circle you can type the name of the individual. If Photos makes a mistake and places a circle around something that's clearly not a face – a T-shirt design, for example – then just click the 'x' button at the left of the recognition circle to dismiss it.

Dealing with facial recognition problems

Photos' facial recognition is pretty good, but it's not bulletproof and you might run into some problems, as follows:

Faces that aren't faces: When you're viewing the circular thumbnails in the Faces album, Photos might sometimes think something's a face when it isn't. In our tests it thought a desktop fan and a cup of tea were faces, for example, as well as the queen's head on a banknote that appeared in a photo. The solution is to right-click the circular thumbnail and select Ignore This Face.

Multiple instances of the same person: It's likely that people will appear many times in the Suggested Faces list in the Faces album, even after you've initially recognised them. The solution is to click their thumbnail and type their name as you would with anybody else, in which case they'll be added to the existing Faces entry.

Misclicking: Reviewing photos for facial recognition becomes a little hypnotic and you may well accidentally allow through a photo that isn't actually that person. There's no way to undo this there and then The solution is to open the Faces album of that person, locate the photo, then right-click it and select the option at the bottom of the menu that appears. This can also be used to remove any photos that Photos has misrecognised automatically.

Next month: We'll continue looking at Photos for Mac. You can download the Newsstand version of the magazine from tinyurl.com/pevjevb.

Retina MacBook accessories

THE BEST ACCESSORIES YOU CAN USE WITH THE USB-C MACBOOK

By Cliff Joseph

1. Apple USB-C Multiport Adaptor

Price: £65

Most people who buy the new MacBook will have existing devices, such as printers and hard drives, that can't be plugged directly into the MacBook's solitary USB-C port. The good news is that Apple has a number of adaptors that can help you out here. The bad news is that these are pretty expensive.

The cheapest option is the basic USB-C to USB Adaptor, which costs £15 and allows you to plug one USB device into your MacBook. Unfortunately, you can't charge the laptop at the same time. If this is a problem, you'll have to shell out £65 for one of Apple's USB-C Multiport Adaptors.

Two versions are available, which include either an HDMI interface for connecting to HD TVs and monitors, or VGA for older monitors. They also have a conventional USB 3.0 socket for connecting other devices and a separate USB-C port, so you can charge the MacBook at the same time.

2. Apple AirPort Time Capsule

Price: From £249

Apple's Time Capsule has been around for years, and is tailor-made for use with the new MacBook. It's a wireless NAS drive (network attached storage) that can be connected to your home or office network and allows you to back up multiple Macs using Time Machine.

Some NAS drives can be complicated to set up, but one advantage of the Time Capsule is that it's easy to use. The AirPort software built into all Macs automatically detects it on your network. You then simply turn on Time Machine on your MacBook and let it take care of all your automatic backups.

Using Wi-Fi for the initial backup might be a bit slow – we recommend leaving it running over night – but subsequent backups should be much quicker, especially as the MacBook and Time Capsule both support the latest high-speed 802.11ac Wi-Fi technology.

Apple's drive may also eliminate the need to buy extra adaptors, as it has a USB 2.0 port that allows you to connect a printer or hard drive, and share it over your network. There are also three ethernet ports, so you can use it as part of a wired network, too.

It's a bit more expensive than some NAS drives, costing £249 with 2TB of storage or £349 with 3TB, but its high-speed Wi-Fi and easy setup process make it a good choice for homes or offices that have multiple Macs.

3. Buffalo MiniStation Air

Price: from £90

Apple's Time Capsule may be a good option for wireless backup when you're at home or in the office, but it's expensive and definitely not portable. If you want to backup your laptop when you're out and about, then it's both cheaper and more convenient to buy a self-contained wireless drive, such as Buffalo's MiniStation Air.

Buffalo MiniStation Air

It's neatly designed, measuring just 18mm thick and weighing about 300g, so it's easy to slip into a bag alongside your MacBook. You can transfer files using Wi-Fi, plus the drive has a rechargeable battery that provides up to 12 hours of continuous use, so it only needs charging every couple of days.

The drive also has a USB 3.0 port, so you can plug it straight into other Macs and PCs if you need to transfer files between computers, and there are apps for both iOS and Android, so you can use it with other types of mobile devices, too. You can even plug your phone into the USB port on the drive and use it for an emergency top up if your its battery is running low.

The Wi-Fi connectivity means that the MiniStation Air is a bit more expensive than a conventional hard drive, but you can pick up the 500GB model for £90, while the 1TB version is £130.

4. Twelve South PlugBug World

Price: £39

As well as preventing you from connecting printers and other devices, the MacBook's lone USB-C port also means you can't use it to charge mobile devices, while it's being powered from the mains. The PlugBug is an ingenious solution that acts as a dual-charger and a travel kit at the same time.

The cherry-red device piggybacks on to the MacBook's normal charging block, so you can still plug the laptop into the mains just as normal. However, PlugBug also has a USB port, so you can plug in and charge another device at the same time. This socket provides 2.1A output, so it's powerful enough to quickly charge even an iPad Air.

You can also detach the PlugBug from your MacBook charger and use it as a wall charger for your iOS devices when you're travelling. Five plug adaptors are included, so you can use it in most regions around the world. It's compatible with most other MacBook models too, including the MagSafe 2 chargers on the MacBook Pro and Air, so it's a useful accessory for anyone that travels a lot with their laptop.

5. Ministry Of Sound Audio S

Price: From £79

The built-in speakers on the new MacBook are pretty good considering how small they are, but it's still worth investing in a decent set of headphones or speakers to give your music a boost. One of the best portable Bluetooth speakers we've seen recently is the Audio S Plus, which is part of the new audio range from the Ministry Of Sound.

Two models are available, with the standard Audio S priced at a reasonable £79. Since audio engineers who work on the gigantic sound system at the Ministry Of Sound nightclub in London were involved in their design, it shouldn't come as a surprise that they produce good sound. They are also sturdy and splash-proof to the IPX4 standard, so are a great choice for outdoor use. The rechargeable battery lasts for up to 15 hours, and you also get a couple of wristbands so you can carry them around with you.

Priced £129, the second model in the range is called the Audio S Plus. It has the same basic design as the cheaper option, but includes a microphone, too. You can also pair two speakers together for proper stereo output, and it comes with a metal stand and power supply so you can set it up as a stereo system for indoor use.

6. Sennheiser Urbanite XL Wireless

Price: £249

It may not have a lot of USB ports, but the new MacBook still has a headphone socket, so if you're an audio purist who doesn't like Bluetooth headphones, then you can still stick with your favourite wired headphones.

If, however, you're going to take the Bluetooth option, then my favourite wireless headphones at the moment are Sennheiser's Urbanite XL. The big, chunky earpieces block outside noise and pour music into your ears. There's also a touch-sensitive control panel that lets you control your music or take phone calls with a tap of your finger.

The Urbanite headphones have been tuned to provide strong bass output, but without smothering the higher frequencies, as some bass-heavy rivals tend to do. That makes them suitable for a wide range of music styles, from dance through to gentler ballads and acoustic strumming. The Sennheiser's also support the high-quality APT-X codec

The Urbanite headphones are good for travelling with your MacBook, too. They're solidly built, with steel hinges and a strong, flexible headband. The earpieces also fold inwards, so they take up less space when you need to squeeze them into a backpack or bag.

Ministry of Sound Audio S Plus

Sennheiser Urbanite XL Wireless

The built-in battery can last for up to 25 hours, but Sennheiser also includes an audio cable, so you can still use the headphones if the battery runs out.

7. Kanex USB-C Gigabit Ethernet Adaptor

Price: £29.95

The billionaires at Apple may live in a perfect Wi-Fi world where nobody uses messy cables, and Wi-Fi hotspots are always fast and reliable. Meanwhile, back on planet Earth, my office has a dead-spot where the Wi-Fi doesn't work, and I have to use ethernet to provide a network connection. Plenty of businesses also prefer to use wired networks, as they're faster and more reliable than Wi-Fi, as well as being more secure. Wired connections also provide better performance for off-duty tasks such as gaming and streaming video.

In other words, there will be plenty of MacBook owners who still need ethernet connectivity. Kanex was first to plug that gap, with this adaptor that converts the MacBook's USB-C port into a gigabit ethernet interface. You'll still need to provide your own ethernet cable, but that shouldn't be a problem. Our only criticism is that you can't charge the MacBook while the ethernet adaptor is connected, but at least it gives you the ability to connect to a wired network if there's no Wi-Fi available.

8. SanDisk Dual USB Drive Type-C

Price: £40

I use Dropbox to back up important files, but I've found that public Wi-Fi hotspots are often too slow or unreliable to rely on them for online backups. When I'm out and about with my MacBook I still carry around a little USB memory stick, so that I can make a quick backup of my work files every now and then.

SanDisk's Dual USB Drive is a good option, as it's one of the few storage devices we've seen that includes a USB-C connector. It also has a USB 3.0/2.0 connector, so you can use it with other Macs and PCs and quickly transfer files on to your MacBook.

The Dual USB Drive measures just 43mm long, so it's easy to slip into your pocket when you're on the move. It's currently only available with 32GB storage, but that will be enough for most people to back up their most important files when they're away from the office.

9. WD My Passport Ultra

Price: From £60

Memory may be handy for backing up a few files when you're on the move, but if you've got a lot of data that you need to store, then a high-capacity portable hard drive is still the best option.

The My Passport Ultra is one of the most popular portable drives in the world, and it's just been updated, with models offering up to 3TB in storage. It measures just 21mm thick and weighs a pocket-friendly 230g, so it's easy to carry around with your MacBook when you're travelling. It's available in a variety of colours, and prices start at just £60 for a model with 1TB capacity. There are also 2- and 3TB models priced at £90 and £160 respectively, which should be enough storage even for video-editors who need to store huge video files on their laptops. The Passport Ultra can also keep your files safe from prying eyes, with 256-bit data encryption.

The standard model is supplied in the NTFS format for Windows PCs, but you can easily reformat it using Disk Utility on your Mac. Alternatively, there's a special Passport For Mac version, which comes in the Mac's HFS format but costs about £10 extra.

10. BT HomeHub 5

Price: £129

The MacBook's reliance on Wi-Fi connectivity means you need maximum performance and range from your home or office network. The 802.11ac version of Wi-Fi used by the MacBook – and most other current Apple products as well – is faster than the older 802.11n version, and also provides better range and coverage. If you don't already have an 802.11ac router, it's time to upgrade.

The HomeHub 5 is a good option for home users – especially, of course, if you're one of BT's existing millions of customers. The slimline HomeHub 5 router looks smart, but the design is practical as well, as it's designed to fit through your letter box in case there's no-one at home when it arrives.

Despite the compact design, the HomeHub 5 has three internal aerials to provide strong Wi-Fi coverage – and it reaches spots in our office that the old Home Hub 4 couldn't reach. The router provides simultaneous dual-band support on the 2.4- and 5GHz wavelengths, and includes four Gigabit Ethernet interfaces for wired connections too. The £129 price tag is a little steep, but existing BT customers can get it at half price.

BT HomeHub 5

Free

Contact
■ apple.com/uk

Specifications
OS X 10.6.8 or later;
5.72GB disk space

Free

Contact
■ apple.com/uk

Specifications
OS X 10.6.8 or later;
5.72GB disk space

OS X Yosemite vs El Capitan

Compared to Yosemite, the updates in El Capitan must count among the most minor of any OS X update, stretching right back to when the operating system was introduced in 2000. In fact, you'll have to look closely to see much difference. However, new features are there and some of them are extremely welcome, as we discover in this comparison of the beta of El Capitan and Yosemite.

Mission Control is vastly improved in El Capitan and apps can be switched to full-screen by dragging them to a bar at the top of the screen.

Performance

Spotting performance improvements between versions of OS X is increasingly difficult now that Apple almost universally utilises solid state storage across its Mac range. Tasks such as launching an application occur near-instantly.

Despite this, Apple says that El Capitan will load programs up to 1.4 times faster and switching between applications will be twice as fast. Our tests were inconclusive – Blackmagic's Disk Test and Geekbench produced identical results on both operating systems. We're also aware that El Capitan is a beta, so our results are unscientific at best, plus the benchmarking apps haven't yet been optimised for El Capitan.

On a subjective level, El Capitan was incredibly fast on our 2015 MacBook Pro. Compare that to Yosemite: since its introduction many Mac users have been painfully aware of lags and slowdowns, such as stuttering animations and network connectivity issues. We didn't experience anything like this in El Capitan.

Design

One of the more visual changes is that El Captain's user interface uses a variation of the San Francisco font that was introduced with the Apple Watch, and also features in iOS 9. It's much more Retina-friendly compared to both Yosemite's use of Helvetica Neue, or the use of Lucida Grande in earlier releases of OS X.

The colour pinwheel cursor that occasionally appears to indicate OS X is too busy to interact with the user has been overhauled and given the same flatter yet colourful appearance as the new OS X look introduced with Yosemite. It's a small but welcome tweak and – combined with the new system font – underscores the fresher, contemporary feel introduced with Yosemite. The new cursor is also a lot easier to spot on a busy desktop.

Moving on, Force Touch trackpad support was introduced with Yosemite and in El Capitan there's an additional setting within the Trackpad pane of System Preferences to deactivate the click noise. Referred to as Silent Clicking, this somehow doesn't compromise the degree of feedback, which is still handled via the Click slider.

The menu bar in El Capitan can now autohide via a setting in the General pane of System Preferences, in the same way that the Dock can emerge out of the bottom of the screen in Yosemite. If you've used full-screen mode in Yosemite, you'll already have experienced this feature, but now it can be used all the time to gain more desktop space.

Mission Control

Mission Control is very much Apple's pet project for the desktop and every recent release of OS X has seen some degree of improvement. In El Capitan, it features a bar at the top of the screen that shows the names of the existing desktops/full-screen applications. This replaces the thumbnail view in Yosemite, although placing the mouse cursor in this area will still reveal the thumbnails. Any window shown in Mission Control can be dragged up to this new menu bar to turn it into a full-screen program. The same action in Yosemite merely creates an additional desktop space.

New to El Capitan, full-screen mode can now display two programs side-by-side, in a feature Apple calls Split View. This is activated by dropping a second application on to an existing full-screen program's thumbnail within Mission Control. This lets you run the likes of Safari and Calendar side-by-side, for example. Each app is separated by a black bar that you can drag to adjust which one gets more screen space. If you've embraced full-screen working in Yosemite, then this is a useful addition, though we doubt it's going to tempt most people away from the traditional way of working with regular program windows.

In both Yosemite and El Capitan some windows can't be set to full-screen, such as System Preferences. Nevertheless, banging the System Preferences window into the top of the screen will activate Mission Control in El Capitan, and this provides a neat little power user shortcut.

Core tools

You'll need to look hard to see any changes in Safari, although this is perhaps no bad thing considering that it has matured into a solid web browser. In El Capitan it borrows the pinned tab feature introduced by Google Chrome but implements it more sensibly by opening any links you click in fresh tabs, thereby locking pinned tabs to the URL you choose.

The Develop menu of Safari, accessible via the Advanced pane within Safari's Preferences, now features a handy Responsive Design mode that lets you switch the web page to dimensions used on various Apple devices.

As with Safari, Mail's new features within El Capitan are subtle compared to Yosemite. For example, if your Mac has a trackpad, you can swipe left or right on a message to Trash or Delete the message. Annoyingly, Gmail users can't swipe to archive a message, and there's no configuration option to control the swipe feature. You can't even turn it off. Nor can you click and drag with a traditional mouse to swipe in this way.

In full-screen mode, new messages can be minimised to the bottom of the screen, and these can be arranged as tabs in a feature that's reminiscent of the tabbed browsing feature that arrived with Finder in Mavericks.

Notes in El Capitan is in essence a whole new application compared to Yosemite, featuring much more control over text formatting. The program is also now a 'share destination' from within other apps, so you can send a map location straight to a new note, for example, or even a file from Finder/the desktop. The Reminders app can also receive items in this way via its own new entry on the share menu.

Alas, to gain access to the all-new Notes features, you'll need to upgrade your Notes iCloud database. The chance to do so appears when you first run Notes on El Capitan, but doing so makes your existing notes instantly incompatible with earlier versions of Apple's operating systems.

Maps gains a new Transit button alongside standard and satellite views that shows buses, trains and other public transport routes overlaid on to the standard 2D map. Unfortunately, you can't switch to 3D/satellite mode and also view transit lines. Still, you're able to see the tube lines in London mapped geographically, which is handy, and can ask Maps for the best way to get from Tooting to Canary Wharf via public transport, for example. Alas, London is currently the only UK city to have public transport directions. Maps has always been a work in progress though, and we're sure this situation will change.

One app that's arguably in desperate need of a complete overhaul is Messages, but that sadly hasn't arrived in El Capitan. Recent feature additions such as tying in your iPhone's SMS via Handoff have in essence been bolted on to an application that's a decade old. There are some signs of some refinement in the new operating system – the preferences dialog box is now less cluttered, for example – but this is to the detriment of the ability to add a messaging status icon to the menu bar.

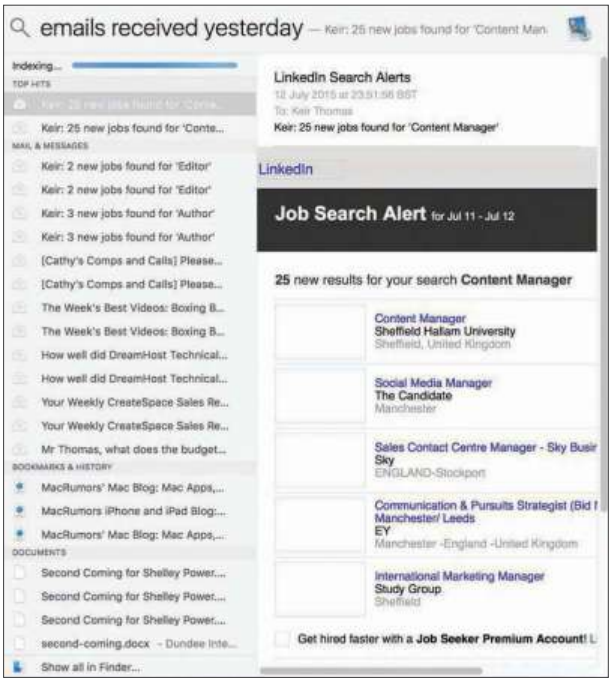
System tools

With the core system tools most of us use everyday without noticing, Apple appears to have taken the approach of, "if it ain't broke, don't fix it". Finder seems to be functionally and visually identical to Yosemite, for example.

A true relic of the Jobsian era, Dashboard lives on in El Capitan but it's deactivated by default within the Mission Control pane of System Preferences. It's hard to imagine it surviving into OS X 10.12 next year, especially considering that it still hasn't been updated for Retina-equipped screens.

The new Spotlight window introduced in Yosemite can be moved around in El Capitan by clicking and dragging. It can also be resized to show more than a handful of results. There's a slightly annoying caveat, though – you can only make the window taller and not wider. However, the window does remember the resizing choice you make, and the position you leave it on screen.

In El Capitan, Spotlight also responds to Siri-like queries, such as "photos from last November in Germany". Why Apple hasn't gone the whole hog and ported Siri to OS X is a little baffling, but this is a welcome step in that direction.



El Capitan's Spotlight window can be resized, but only vertically.

Disk Utility has been given a visual overhaul compared to Yosemite and now features a bar graph that illustrates how full a partition is, and what kind of files are taking up the space. Strangely, the age-old ability to repair permissions has vanished. In Yosemite this tool had started to return false errors (no doubt leading to non-essential calls to Apple Care), so its removal is understandable. However, it could fix some problems on misbehaving systems. You can still scan a disk for errors via a First Aid toolbar button, though.

Disk repartitioning within Disk Utility is now handled via a more common sense pie chart representing the entire disk, with a handle on its border that can be dragged to resize individual partitions. Showing that Apple is ever ready for the future, you can set unit sizes with Disk Utility of exabytes (EB) and zettabytes (ZB). It's unimaginable that storage will ever get that big, but once upon a time 100GB of storage seemed insanely large.

Macworld's buying advice

We'll have to hold of on our final verdict until the launch of OS X El Capitan, but so far, we're impressed. **Keir Thomas**

OS X Yosemite vs Windows 10

Free

Contact
■ apple.com/uk

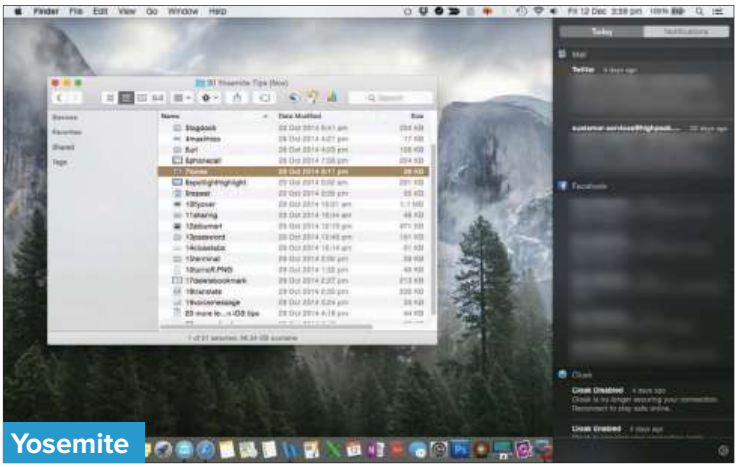
Specifications
OS X 10.6.8 or later; 5.72GB disk space

Free
Windows 7 and 8.1 users
£99 inc VAT (Home)
£189 inc VAT (Pro)

Contact
■ microsoft.com/en-gb

Specifications
1GHz or faster processor; 1GB for 32-bit or 2GB for 64-bit Windows 10; 16GB drive space for 32-bit or 20GB for 64-bit; DirectX 9 or later graphics card; 1024x600 pixels or higher display

It's been a rough few years for Microsoft but Windows 10 has seen a resurgence of interest. It's feels like the 1990s all over again as PC users coo with delight at what appears to be a genuinely usable version of Windows. But while PC users might be thrilled, how does Microsoft's latest offering compare to OS X Yosemite?


Yosemite

Desktop

Yosemite's desktop was visually overhauled with a new flat look, though functionally is mostly identical to earlier releases of OS X. You get the Dock, from which you can launch apps, or open files and folders via Stacks. Mission Control lets you see what apps and documents are open, and switch between them via a graphical representation of their program windows as thumbnails. Spaces lets you switch between apps running in full-screen mode and also create or switch to additional desktops. Apple also knows that it's not yet time for desktop and mobile to be merged into one sticky whole.

Windows 8's basic fault was not understanding this, and for desktop users Windows 10 restores the Start menu, which was mostly banished from Windows 8. We don't wave goodbye to Windows 8's Live Tiles because the Start menu is a hybrid. At the left is the familiar listing of features and apps – it's here you'll click the Power link to shutdown or suspend, for example, or access a list of your installed apps – while at the right are Live Tiles similar to those in Windows 8. This makes the desktop Start menu now firmly landscape in orientation, rather than vertical, but this makes sense considering most laptop and desktop screens are widescreen nowadays.

Windows 10 doesn't abandon the Metro-style apps that came with Windows 8, such as News and Weather. These continue to eschew ribbons, icon bars or menus in favour of a sparse web page-styled approach but they do run in program windows when Windows 10 is used in the default desktop mode. It's still a little jarring that some apps have toolbars and/or menus, but it's less irksome than you might think.

If you can't live without the everything-fullscreen-all-the-time approach of Windows 8 switch to Tablet Mode, though this means the Start menu and all apps, including traditional desktop apps like Office, fill the screen. In fact, Windows 10 includes Continuum, which makes switching between desktop and tablet modes automatic for those who use hybrid devices that feature detachable keyboards. This isn't an issue for Apple laptops. If you want a tablet, then get an iPad. If you want a laptop, then get a MacBook.

Notifications

Significantly boosted in Yosemite, the Notification Area lets your apps and OS X tell you important stuff, and also provides a home for widgets that show information such as the weather, or that let you perform quick tasks like calculations. Third-party apps can add in their own useful widgets, too. You can open the Notification Area by clicking the icon at the top right of the desktop, or swiping in on a trackpad from the right-hand side with two fingers, but it otherwise keeps out of the way.

Windows 10's Action Centre is almost identical to Notification Area. You open it on the desktop by clicking an icon at the bottom right and it slides in from the right of the screen. New email notifications appear here, for example, but in reality the equivalent functionality of OS X's Notification Area is spread across both the Action Centre and the new Start menu's Live Tiles. These are 'Live' because most update to show relevant information – the Weather tile shows current conditions, for example. Provided its set to Wide or Large mode (you can choose by right-clicking it), the Mail Live Tile will list your latest emails – even though these are also listed in the Action Centre.

Window organisation

Yosemite firms-up Apple's goal for apps to run either as traditional program windows or full-screen. It does this by switching the maximise button to a full-screen option. Working full-screen in apps courtesy of Mission Control and Spaces makes life significantly easier on smaller screens such as those on MacBooks.

Windows 10 splits out full-screen working to a dedicated tablet mode that you can switch on and off – a little irksome if you use a laptop with a small screen, although apps can still be maximised to occupy most of the desktop in the same way that's been possible for a few decades now.

More signs of Microsoft's (ahem) homage to Yosemite can be found in Windows 10's new Task view – named with a typical lack of imagination. This looks, feels and smells like Mission Control, even allowing you to create new desktop spaces if you're switched to Desktop Mode. In Tablet Mode, it merely lets you switch between full-screen apps. Task view replaces the Alt+Tab switcher, so forms a central part of the Windows 10 experience.

Windows 7 introduced the Snap window organisation tool, which lets you click and drag windows to the top or side of the screen in

order to arrange them neatly into full-screen or half-screen sizes. Windows 10 enhances this with a little of the Task view magic – bash a window into the left of the screen, for example, and it'll be arranged so it fills half the screen while the right will fill with a Mission Control-like thumbnail listing of windows. Selecting any will then fill the remainder of the screen.

Search

The Spotlight search tool is one of OS X's greatest features and makes the concept of a file system redundant and provides access to all types of data. You can use Spotlight to open files, start apps, search emails, and much more. In Yosemite it's also been expanded to perform ultra-rapid web, Wikipedia, App Store, and map searches. Use Spotlight right and it will form the heart of your Mac experience.

However, it's with search that Microsoft has leapfrogged Yosemite because Windows 10 brings Cortana to the desktop. This is Microsoft's Siri-a-like personal assistant that was introduced to mobile devices with the Windows 8.1 update. A new search field declaring the user should "Ask me anything" appears to the right of the Start button, and here you can type your query: "What's the most recent Arsenal score." If you've a microphone plugged-in then you can just say "Hey Cortana" and start speaking.

Cortana arguably isn't as clever or elegant as Siri, and can spend a lot of time 'thinking' about what you ask. More often than not, you'll be booted off to a Bing web search in any event. The Notebook feature lets you directly inform Cortana about yourself, which is a nice touch, and we remain baffled as to why Apple hasn't yet ported Siri to OS X.

Continuity features

Apple unifies OS X and iOS features underneath the banner of Continuity and they include Airdrop, which is boosted in Yosemite to let you share files between not just desktop computers, but also iOS devices.

Windows 10 simply has nothing similar, which is somewhat crazy considering that the Windows 10 'Core' runs on all devices.

You have been able to send SMS messages to other iCloud users on your Mac since Mavericks in 2013, but now you can text anyone from your Mac, regardless of what smartphone they are using. Also new in Yosemite is the ability to make and receive calls on your Mac using your iPhone number.

Again, there's nothing in Windows 10 that even comes close to this level of integration. The nearest equivalent is IP-based messaging services like Skype. If you're sending an SMS and both parties use Skype, Windows 10 will automatically flip to Skype so you can have a real-time conversation, whether that's continuing to use IM, or switching to a voice or video call

Gaming

Windows 10 brings Xbox Live to the desktop. Players will also be able to play Xbox One games on their PC by streaming them directly from their console to their Windows 10 tablet or PC within their home. Gamers will be able to play against people on their Xbox One in multiplayer games. Game recording is also built into Windows 10 for Windows games.

Microsoft is also working on an augmented reality system called HoloLens, using a headset a little like Google Glass. Windows 10 will be the first holographic computing platform and a set of APIs will mean developers can create holographic experiences in the real world.

Outside of basic puzzlers, OS X has never been much of a gaming platform. The introduction of Steam is changing this slowly, but Apple's hardly pushing hard here. Additionally, so far modern-era Apple has steered clear of gimmicks like virtual reality headsets.

iCloud vs OneDrive

Both iCloud and OneDrive offer the ability to sync files and settings via a magical shared folder whose contents are automatically duplicated on each of your computers and devices. However, OneDrive bears more resemblance to Dropbox. Given iCloud's issues we have to say this mimicry is no bad thing. OneDrive is hard-coded into Windows 10, just like iCloud is in Yosemite and El Capitan, in that both appear in Finder/File Explorer.

OneDrive also provides remote access to all files on a user's hard disk – including network shares if they're mapped to drive letters. This is like Back To My Mac on OS X, although easier to setup because file transfer is handled via OneDrive rather than via a complicated port mapping setup that frequently doesn't work. We have to say that OneDrive wins here again.

Any sensible person on either OS X or OneDrive will use Dropbox instead. But while OneDrive is far from innovative, we have to say it's a more solid offering than iCloud – at least right now.

Macworld's buying advice

Mac OS X remains so far out in front of Windows in terms of innovation and features that Microsoft may never close the gap. But one thing Microsoft knows well is that Windows only has to be good enough for most users. Forget about elegance. Forget about design. Windows just has to work. And version 10 definitely ticks this box. **Keir Thomas**

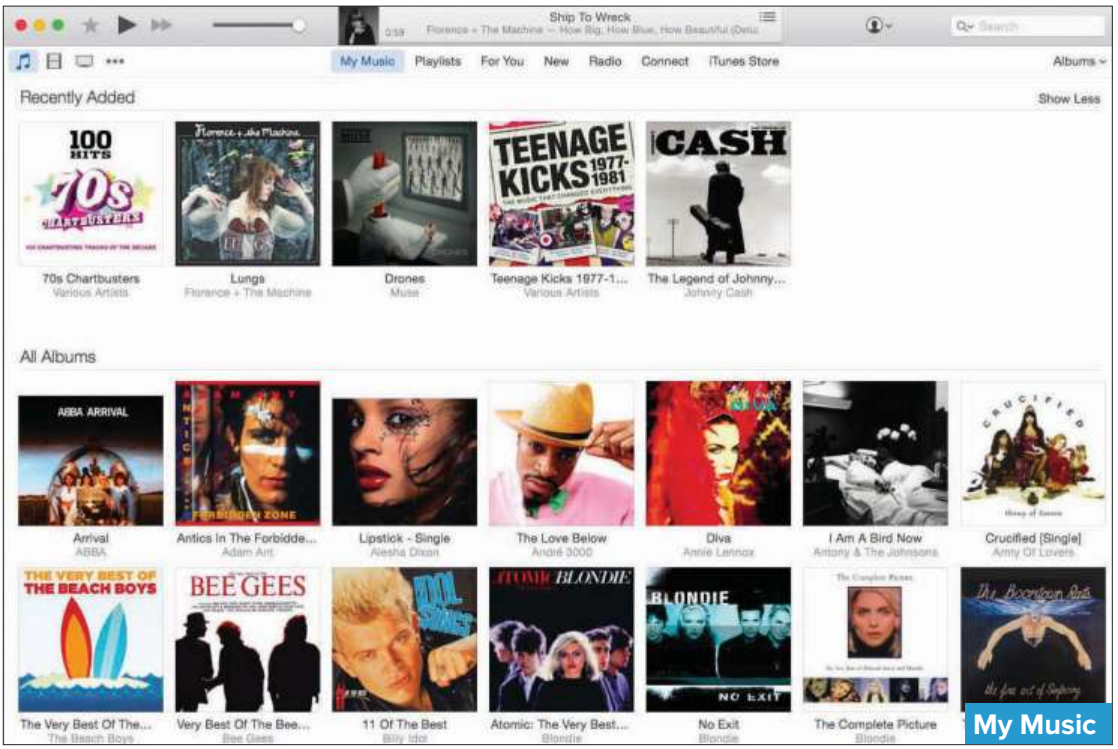
iTunes 12.2

Free

Contact
■ apple.com/uk

Specifications
OS X version 10.7.5 or later; Apple Music requires OS X version 10.9.5 or later; 400MB of available disk space; iTunes Extras require OS X version 10.10.3 or later

Macworld ★★★★★



It's safe to assume that you've read plenty about the new Apple Music streaming service by now – the millions of tracks that are available, the big-name DJs that Apple has hired (and that little spat with Taylor Swift...). But reading about it isn't the same as using it.

Things are straightforward on iOS devices, where the new streaming service and radio features have been integrated into a new version of the iOS Music app. Unfortunately, that's not the case when listening to your music on a Mac or PC. Instead of producing a new Music app for Macs and PCs, Apple has crammed the streaming and radio features of Apple Music into the aging iTunes, a program that was already bursting at the seams and suffering from an increasingly bloated and confusing interface. So how does iTunes 12.2 cope with the introduction of Apple Music – or does Apple just need to throw it away and start all over again?

Quick Fix

Things got off to a bad start when many people who downloaded iTunes 12.2 found that it messed up their existing iTunes music library. Track names, artists and artwork got mixed up, and some users even reported losing some tracks altogether. Fortunately, Apple quickly released an update – v12.2.1 – that seems to have sorted out the most obvious bugs, so we can now take a closer look at iTunes and see how it copes with the new features introduced with Apple Music.

When we originally reviewed iTunes 12 in 2014, we said that it was "the poster boy for feature creep", and that situation just gets worse with 12.2. There are four new tabs sitting in the centre of the iTunes toolbar – which means seven tabs in total, along with the assortment of other menu options stuck over on the far left of the toolbar. The original set of tabs – My Music, Playlist and the iTunes Store – don't change too much this time around, although that's little comfort to people like me who think that the display of their music library went down the toilet when Apple removed the Coverflow mode from iTunes 11.

Toolbar Tabs

The new tabs that have appeared in iTunes 12.2 don't restore our faith either. These new tabs are labelled For You, New, Radio and Connect – and, frankly, they're a mess. The new streaming service is called Apple Music, but is there a tab or an icon labelled 'Apple Music' for you to click on? No, of course not – and rather than being "all in one place" as Apple boasts, it turns out that the various features offered by Apple Music are actually scattered across these four new tabs.

Click on For You, and you're presented with a big red button that prompts you to start your free, three-month trial of Apple Music. If you're not ready to break out your credit card just yet then you can click on 'Go To My Music', which will take you back to your existing iTunes music library that is stored on your Mac or PC. But if you do that you'll suddenly find that the For You and New tabs vanish from the toolbar altogether. There's no explanation or warning for this – the endlessly-hyped and revolutionary Apple Music service just vanishes from sight and goes into a big sulk because of your refusal to sign up on the spot.

You can get those two tabs back if you select Apple Music from the Account pull-down menu, or by activating it in the iTunes Preferences panel (⌘-,), but as an example of interface design this is just bizarre. There's another annoying feature in the New tab as well. This tab shows you the latest new tracks and playlists chosen by

Apple's team of 'music editors'. You can browse through the various playlists, and even add tracks to your 'Up Next' list – but you can't actually play any of these tracks until you sign up for Apple Music.

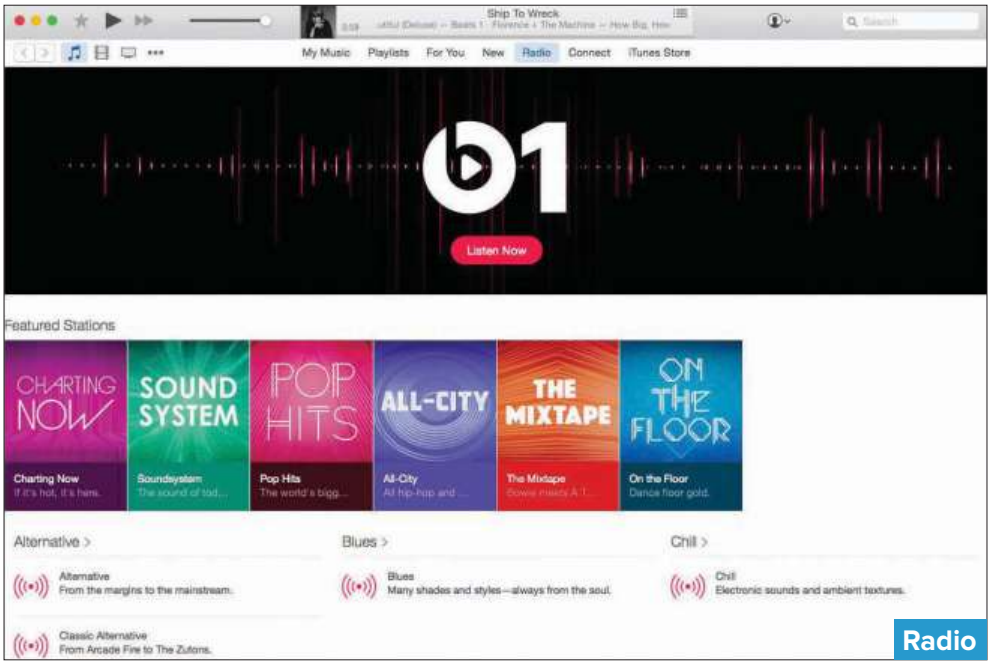
Radio

There's something similar going on with the Radio tab as well. Click on Radio and you'll see a big banner for the Beats 1 radio station, followed by a long list of additional 'stations' organised into categories such as blues, classical and rock. You can listen to Beats 1 right away, just by clicking the 'Listen Now' button, but I was baffled to find that the Play buttons on the other stations didn't do anything, and just left me randomly clicking buttons trying to figure out what was going on.

It turns out that you can listen to Beats 1 without signing up for Apple Music, but you do have to sign up in order to listen to the other stations shown in this tab. To be fair, that makes some sense if Apple is trying to force encourage people to sign up for the new service – but it's just idiotic that iTunes doesn't actually tell you that you need to sign up (as the Music app does on iOS devices when you try to listen to any of these stations).

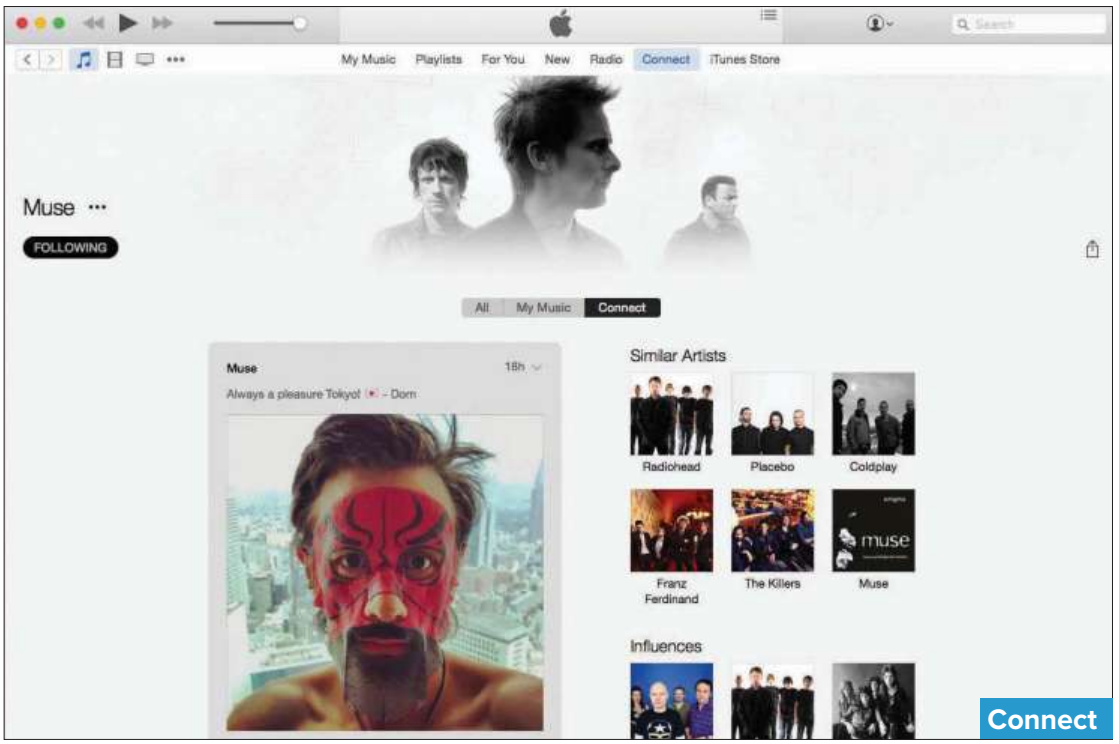
It's also worth pointing out that these 'radio stations' are really just playlists compiled by the staff on Apple Music. They're not actual internet radio stations, which remain hidden away in the unnamed 'three dot' menu over on the left of the iTunes toolbar.

After all that, it was a relief to find out that the Connect service is a bit more straightforward. You can view artist feeds without having to sign up for Apple Music, and add comments and share items on Twitter or Facebook – although you do need to sign up in order to play or download any tracks that artists include in their feeds. The only other head-scratcher is the fact that the iTunes Match tab found in previous versions of iTunes has now vanished. If you subscribe to iTunes Match then you'll need to reactivate it from the Account menu in order to use it again.



Macworld's buying advice

Apple often boasts that it embraces innovation by dumping existing programs – such as iMovie – and rebuilding them from scratch. It's time that Apple did the same thing with iTunes. **Cliff Joseph**



iOS and Mac SOS

SOLUTIONS TO YOUR MOST VEXING MAC AND iOS PROBLEMS

By Glenn Fleishman

Deauthorising OS X software before moving to a new device

Q: Is there a place on Yosemite to find programs that are currently authorised on my Mac? I am specifically interested in those that must be deauthorised before moving to a new device. I'm already aware iTunes must be.

Philip Shook

A: As Philip notes, iTunes lets you deauthorise a computer (*Account → Deauthorize This Computer*). Doing so frees up a slot in the total count of five computers that you can use the same music and videos on with the same iTunes account.

For general software, if it's purchased from the Mac App Store, there's no requirement to deauthorise. As Jason Snell wrote in 2011 when the Mac App Store first appeared, there's no limit on the number of Macs using the same Apple ID that can use software purchased using that Apple ID.

Some individual software packages handle this differently. If you use Adobe software, particularly its Creative Cloud suite, you have a limit as to the number of Macs for which you can be authorised at once. It's best to use the built-in tool to disconnect before switching to a new computer. In Creative Cloud, click its menu-bar icon or bring up its window, click the gear (Settings) icon, choose Preferences, and click Sign Out.

If you own any other professional software packages, it's worth checking their policies individually, but for any software that has to check in with an Internet server to validate that it can be used, you can almost always use a website or the software itself to disable its use on other computers.

Where did AirPort Utility go?

Q: I have a 13in laptop at home using previous AirPort Utility software. I lost it by using 'clean my Mac' software. How do I restore the lost program?

Silvain Gilbert

A: Apple updated its AirPort Utility from version 5, which runs on pre-Lion Macs, to version 6 in 2012. Version 5 also ran on Lion and, if memory serves, Mountain Lion. If you're running an older version

of the operating system you may need version 5.5.3 or 5.6.1.

Although Apple doesn't make most of its utility software available separately – you have to reinstall OS X or copy an application from another Mac – it does have the entire history of AirPort firmware and utility software available for download (tinyurl.com/qj87k9o). You can sort through that page to find the appropriate version. Click Load More Results at the bottom if you don't see the version you need.

Also note that the AirPort Extreme Card shown here was for sale from about 2003 to 2009 for late-generation PowerPC-based Macs.

Repartitioning a drive to remove a partition

Q: I would like to delete my Mavericks partition and expand the Yosemite one to encompass the entire internal hard drive. In other words, return my Fusion drive to a single partition. However, the controls for doing this in Disk Utility are all unavailable.

L. Faye Russell

A: Normally, if you use the GUID Partition Scheme to format a drive – it's the default format for new Macs – you can create and resize partitions at will. A drive is a physical thing, while partitions are 'soft' or 'logical', managed by the startup firmware (EFI) and operating system.

But Fusion is a finicky beast. For those who don't have a Fusion drive, it's a combination of fast SSD storage and a slower hard disk. OS X automatically optimises storage so that more frequently used files move to the SSD. This gives you some of the advantages of SSD, such as fast startup time, without the expense of an SSD the size of your entire volume, nor having to manage moving files around yourself or fit the entire operating system on your startup SSD volume.

Apple notes that you can only create a single partition (tinyurl.com/ou873w9) on a Fusion drive, and Disk Utility places this separate partition exclusively on the hard drive. Once created, Apple offers no advice, nor can I find anyone with advice to offer, on deleting the partition without fully erasing the drive. Since you have a Fusion system, you'd also want to be sure to initialize it via OS X Recovery, which can correctly restore the state.

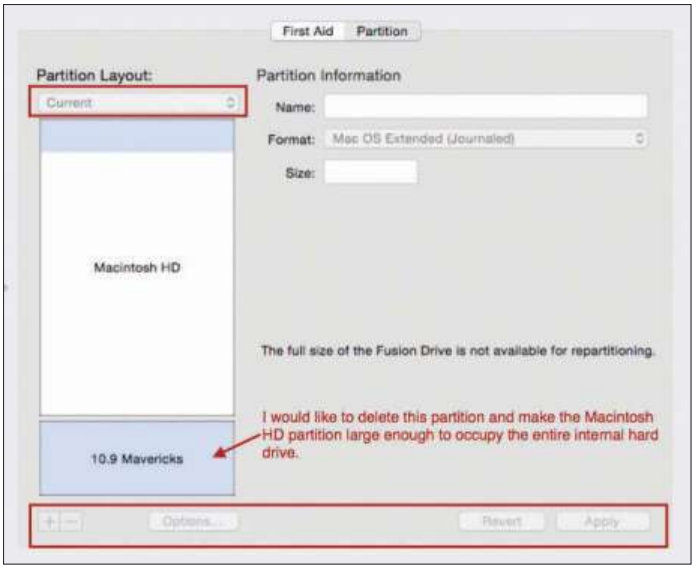
Migration troubles

Q: I'm trying to restore a Time Machine backup of a late 2009 MacBook that was running Yosemite to a mid-2010 MacBook running Lion. Should I update the 2010 MacBook to Yosemite first?

Mike Imbrogno

A: I don't believe it's ever possible to use a newer Time Machine backup to restore to an older version of OS X. You might be able to retrieve files and not the entire system, but even then, I'd worry that there would be an incompatibility.

For the best results, upgrade to Yosemite first, since it sounds like that's what you're planning. If you intend to wipe the 2010 MacBook, you can then restore from the Time Machine backup during the setup process.



Our reader's illustration of the problem with being unable to delete a partition on a Fusion drive.

Windows to Mac

Q: I moved from a Windows PC to a Mac, and all my creation and modification dates were lost on my artwork files, which I use for finding and sorting.

Sarah Melling

A: Unfortunately, there's no way to solve this in migration, and since you've already transferred the files, you probably want a way to fix it.

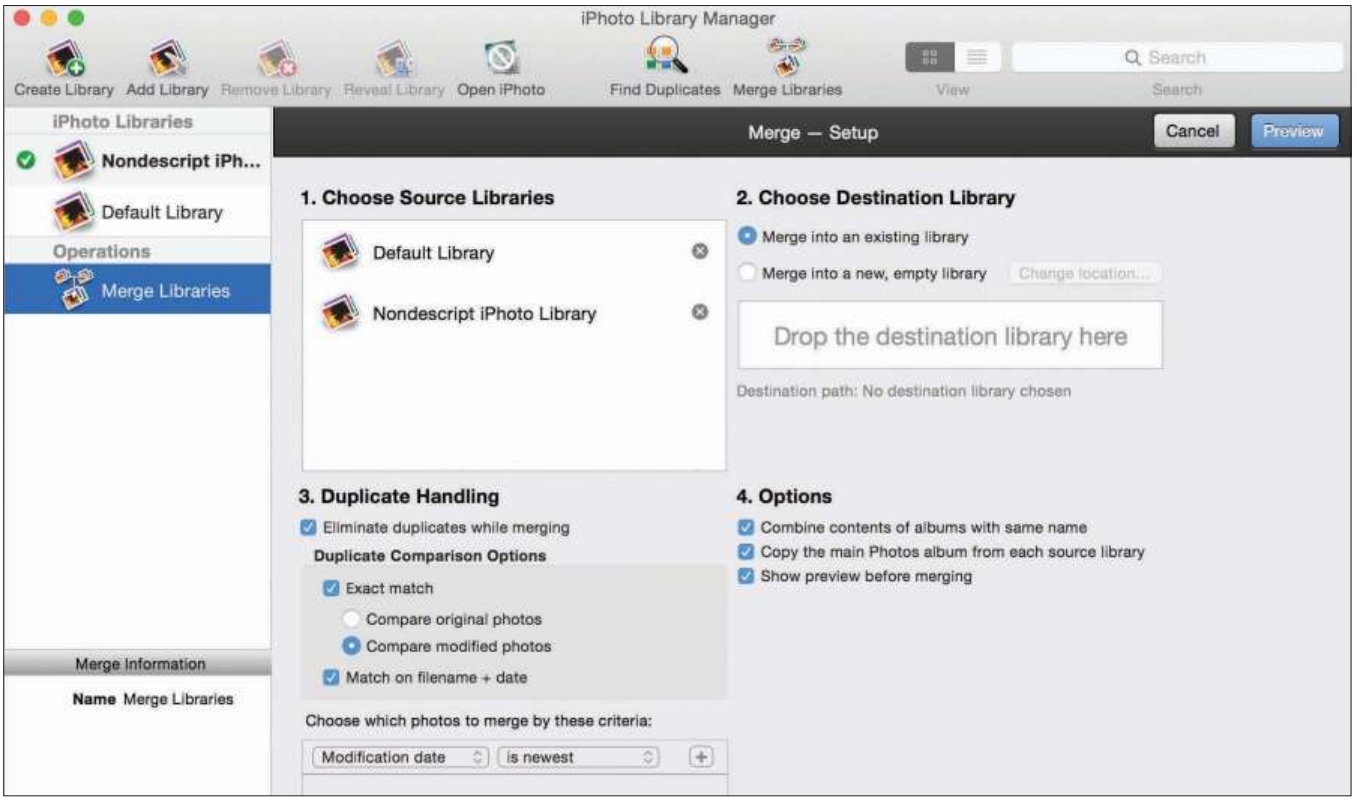
A Better Finder ($14.95 (£9.20), tinyurl.com/ana4k) has the option to read EXIF data from some image formats, which is metadata stored by cameras and other software that can include the creation date. If your files have the creation data embedded in this way, A Better Finder can modify selected files to have a Finder-created date that matches that embedded information.

You could also try File Date Changer 5 (£6.99, tinyurl.com/p9es4an), which allows changing the dates on one or more files as a batch, though you have to specify the dates manually. This feature is included in A Better Finder.

Q: I've been migrating files from Mac to Mac for about 20 years now. I'm going to get a new iMac in the coming weeks. Is it better to start fresh and just copy files/folders, or does it matter?

Caryn Cameron

A: It's a mixed bag. I've also been migrating Macs for many years, and I



typically use Migration Assistant as it's improved enough that I can rely on it to copy everything.

With the 12in MacBook, however, both my *Macworld* colleague Susie Ochs and I hit a stalling problem the first time we tried. In the end, we had to force a shutdown, restart, and try again. Then it worked for each of us the second time. Several colleagues have told us that they've experienced the same thing, and it may have to do with a timeout related to iCloud logins.

More Photos Q&A

At WWDC, Apple said that Photos will be updated in OS X 10.11 El Capitan with new features. Until then (and unless you upgrade), we're stuck using the sometimes frustrating version in Yosemite. I'm still hoping that Apple will release additional fixes for Photos, rather than defer everything to El Capitan.

What can I delete?

It's clear that Photos' approach of using hard linking is confusing because people continue to ask questions about what they can delete. *Macworld* reader Steve Kramer's question is a good example. "Besides Photos Library, I also have iPhoto Library and 'My Pictures.' Can I delete all but the new Photos Library?"

Jason Snell has explained this in-depth (tinyurl.com/k4m3tze), but it's not the easiest concept to leap to mind. Instead of importing files from iPhoto when you upgrade a library to the same volume, Photos makes a new link to the same file. In the Finder, it looks just like another file. In order to delete the original file, all links to it have to be deleted. However, I am wary of throwing away my old iPhoto directory in case I find there was an import problem later. I'd rather have a little overlap – iPhoto has its own database format and thumbnails – than lose pictures Photos had problems bringing in.

> Instead of importing files from iPhoto when you upgrade a library to the same volume, Photos creates a new link to the same file

If the My Pictures file or folder isn't a special iPhoto or Photos library, it probably wasn't imported, and you'll need to follow our tips on merging, which you can find in Jason's article.

iPhoto Library Manager isn't free, but could make your life a lot easier if you're having problems importing or merging old libraries.

Can't finish importing

I have a pile of emails from readers with import problems, even weeks in and after the micro-update from Apple for Photos. Joe Dodd's is typical: "I can't get my iPhoto library to finish moving to photos. It freezes up the entire Mac at 11 to 15 percent completion. The Mac is older, but now I don't know what to do."

These sorts of problems are maddening because there's not enough information for you to know what to test or fix. I have a few strategies you can try:

- Run Disk Utility, pick the volume on which the library resides, and click Repair Disk Permissions. This fixes a multitude of strange issues with OS X software, where files mysteriously don't have the correct

Copy and paste in Photos downsamples your image to no more than 1024 pixels on the longest side. Use File ➜ Export or drag the image to the Finder to get a full-resolution copy out of the app.

read/write access, and yet the software doesn't complain about it – it just stalls or fails. (You might also try Verify Disk, and see if errors show up. If so, you'll need to recover that volume.)

- Try rebuilding the iPhoto library. Apple has advice in a support note – go to tinyurl.com/opywja2.
- Copy the iPhoto library to another disk drive, and try the import there to a Photos library you save on that same drive.
- Get a copy of iPhoto Library Manager ($30 (£19), tinyurl.com/nqn3bqy), which can help rebuild or recover photos. You might wind up exporting a new iPhoto library and then try to import that.

Downsampling in copy

Ole Karstad liked to use copy and paste from iPhoto to other software. However, in Photos, he only gets a small image this way. He wonders if there's a workaround.

Unfortunately, this appears to be the new default and unchangeable behaviour in Photos. If you select a photo and the *Edit* ➜ *Copy* menu is available (which it typically is), Photos automatically downsamples to a maximum of 1024 pixels in the longest dimension in my test.

To use a different resolution, you have to select the photo and go to *File* ➜ *Export* ➜ *Export 1 Photo*. Choose Export Unmodified if you want the original without any changes you might have made through the editing options in Photos; that corresponds to exporting Original in iPhoto.

You can also drag the image or a set of images to the Finder, which keeps the full resolution, and converts everything but GIF, JPEG, and PNG files (such as RAW camera files) to a JPEG.

I do not 'like' this Facebook export

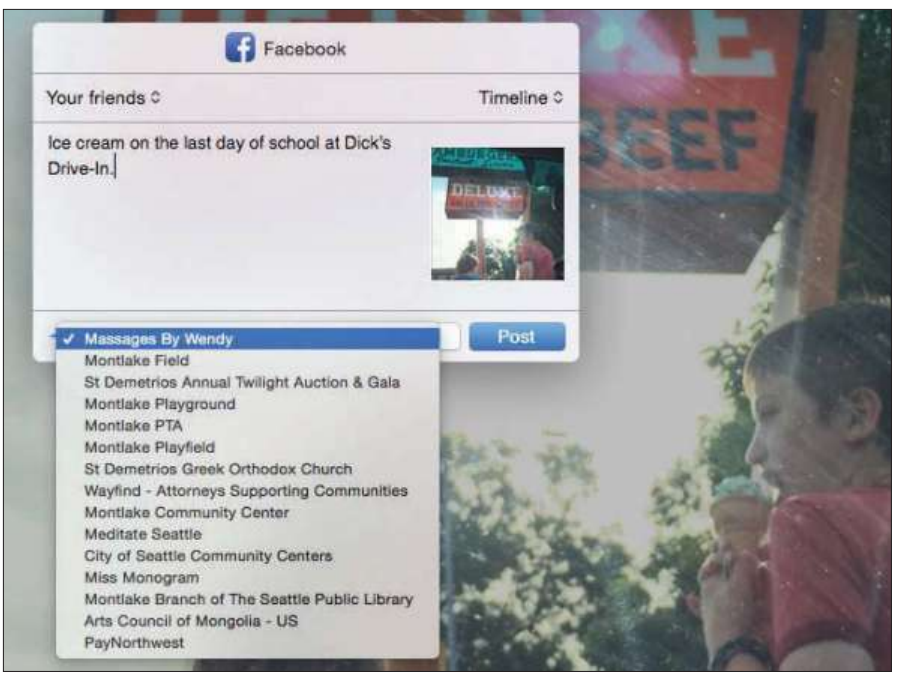
Lowell Nelson tried a number of ways to get Photos to work with his workflow for posting images to Facebook. Unfortunately, Apple seems to have left out too much integration to make his life easy – the ability to select images from within Photos from other apps or the Finder just isn't there yet.

He tried the Add Photos/Video picker in Safari and Firefox from his Facebook page. Nope. He then attempted to drag a photo from Photos into the Facebook app's page, but the browsers both interpret this as a link, not an image.

While Photos has a built-in *Share* ➜ *Facebook* option at the upper right, he notes, "This only works if you don't want to tag anybody or set the location of your post. When I try to set location I only get suggestions of locations that are near the location of my Mac, not access to all of Facebook locations, and no tags available."

His workaround involves dragging a photo to the desktop to make it a file he can manipulate. (Exporting would work, too, with more steps but more control over the image size.)

I still see iPhoto as an option in various apps, Apple's and others, and, as Lowell also found, Mail is one of the few programs updated to let you use a Photos media browser as well as an iPhotos one.



The Location choices in Facebook and other sharing options is based on one's current location, not the geotags embedded in a photo.

Personal device

WHY THE APPLE WATCH ACTUALLY IS MY MOST PERSONAL APPLE DEVICE

By Michael Simon

Having affection for an Apple product isn't usually an unpopular opinion. From the earliest days of the Mac to the iPod, iPhone and iPad, people have forged deep connections with the devices Apple makes, quickly declaring that they could never again live without this or that gadget. It's a pretty ubiquitous phenomenon, and even the hoards of detractors who declare the latest Cupertino creation to be dead on arrival generally climb on board the good-tidings bandwagon after a new Apple product has been on shelves for a few months.

But the Apple Watch hasn't followed the same trajectory. While the first impressions were mostly positive, initial reviewers were somewhat reticent with their accolades, and few since then have offered much in the way of praise. According to many early opinions, the Apple Watch isn't the transformative device that the iPhone and iPad were, and anyone who buys one will eventually relegate it to a drawer of forgotten jewellery after just a few weeks.

Well, to paraphrase Steve Jobs, everyone else must be wearing it wrong. In the three months that I've had my Apple Watch, it has changed my life in a far more measurable way than any other Apple device was able to do in such a short amount of time. In a sense, it's taken me back to a time when my iPhone hadn't yet taken over my consciousness, and I wouldn't want to give it back for anything else Apple may have in its pipeline.

App heap

Like most people who bought an Apple Watch the moment it was available for preorder, I had certain expectations. Aside from the three main aspects Apple touts – timekeeping, messaging, and fitness – I had already earmarked a handful of apps I couldn't wait to install, essentials such as Dark Sky, Workflow, and Clear, which I regularly use on my iPhone.

But where I dutifully check the App Store each week to see what's new for my iPhone or iPad, I barely pay attention to the apps being designed for Apple Watch. It's kind of the opposite of the iPhone effect – after using Apple's original handset for just a few days, I craved a store where I could download games and utilities to enhance its usefulness, but with my Apple Watch I want it to be as simple as possible. I have plenty of apps installed, but if they don't have an accompanying Glance I rarely refer to them. (The exception is 1Password, which offers a secure digital locker for important bits that I might need throughout the day. It's made stuffing a scrap of paper into my pocket obsolete.)

Apple Watch is a conduit, not just to my iPhone, but to the world around me. While I haven't used Digital Touch much (mostly due to the fact that I haven't been able to convince my wife to buy one yet), the concept is central to what Apple is trying to achieve with Apple Watch. It's not about replacing your phone or even leaving it in your pocket – it's about using technology to stay more connected, not just through simple or multimedia messages, but through real digital contact. And that concept seems to be lost on many.

> I can't imagine not wearing the for a week or forgetting to put it on when I leave the house – and that's without using the fitness end of it

Close encounters

When Steve Jobs unveiled the original iPad, he sold us on the full-screen-only mode by describing using Safari as "holding the internet in your hands". It's

Getting a message from someone on my watch makes it feel like they're with me.

an overblown, hyperbolic description, yet it's still totally apt: no other screen lets us interact with our browsers in such a way, and as such, the iPad elevates the web experience through its presentation.

The Apple Watch does something similar. While there are plenty of things it doesn't do well and likely never will – such as reading lengthy emails or swiping through voluminous photo albums – its unique form factor allows for a deeper visceral reaction to tasks I had grown accustomed to on my iPhone. The best example of this is when I receive a picture: getting tapped on my wrist to notify me that I have an incoming message and lifting my wrist to see a photo of my son appear is such a joyous interaction, it makes me linger a few seconds longer than I do when a text comes through on my phone. And I'm much more inclined to share it with the person I'm with, something I never did when my face was buried in my iPhone.

Getting a notification on my Apple Watch allows me to stay connected to both people near and apart from me: it's hard to quantify to someone who hasn't used one, but getting a message from someone on my watch makes it feel like they're with me. Much like the iPad put the internet in our hands, the personal nature of my Apple Watch adds closeness to messages that my iPhone doesn't.

Personal touch

When I first heard Apple describe its new watch as its most personal device yet, I naturally assumed it was referring to the fashion aspect – with so many band and body options, there's literally an Apple Watch to fit any personal taste, from the bright and bold to the decadently lavish. But once I started using it, I understood the deeper meaning of the marketing tag.

Technology generally brings us closer together by pushing us apart – every time a new device enters our lives it sucks a little more time from them. My wife and I bought the original iPhone for each other as a his-and-her wedding presents, but nothing about them brought us closer together. We may have been able to stay in constant contact with each other, but what we gained in long-distance closeness we eventually lost in actual closeness. While we can certainly point to areas where our iPhone have enriched our relationship (particularly with things like near-instant video recording and FaceTime), rare is the time when one of our iPhones isn't at arm's length, commanding at least part of our attention.

By comparison, the Apple Watch's main function has been to take away much of the noise the iPhone brings into my life. I know what you're thinking – just put your iPhone in a drawer and unplug it if it's having so much of a negative effect on your life – but the point is that Apple Watch allows me to stay present in both places. Unplugging is one thing, but it's hard to shut off the part of your brain that wonders what you're missing in the world. With Apple Watch, I can concentrate on my life without constantly checking my phone to see if I missed an incoming email or check out the latest football scores.

Keep it simple

I can understand how someone could want more from their Apple Watch, but I'm not looking for Apple to add more apps and functionality. If I had one wish it would be for the Apple Watch to do the same things it does now but let me leave my iPhone at home. But even when future revisions make this version look extraordinarily basic, its core benefit will remain: Apple Watch has returned something extraordinary that I never really knew I could get back.

The iPhone's original three main features (iPod, phone and internet communicator) have all been watered down by the other things it now does, but I suspect the Apple Watch will never lose sight of its trio of tent poles. I can't imagine not wearing it for a week or forgetting to put it on when I leave the house – and that's without using the fitness end of it much at all – but I also understand how people are confused by it.

After delivering so many products that do such great things, it can be strange to have a product that excels at doing so little. Each time I read another article deriding Apple Watch for its dearth of features or general lack of purpose, I'm not surprised – we've been conditioned to judge products on how much they do, and the Apple Watch is a clear departure from that.

WatchOS 2's new features

THE NEW OPTIONS WATCHOS 2 IS BRINGING TO THE APPLE WATCH

By Ashleigh Allsopp

1. Native apps

One of the features we're most excited about is the ability to run apps natively on the Apple Watch. Third-party apps are one of the device's biggest downfalls, because they're slow and buggy. That's because they rely on the iPhone that the smartwatch is connected to, rather than using the power of the Watch itself. This will all change with the watchOS 2 update, which means the apps will be able to run entirely on your Watch.

2. New tech for apps

Letting apps run natively on the Apple Watch also opens up access to sensors and other technology within the smartwatch, including the Taptic Engine, Digital Crown, accelerometer, heart-rate sensor, speaker and microphone. This means that the possibilities for apps on the Apple Watch will significantly grow. "For example, the Ping app uses the accelerometer to measure the speed of your golf swing," reads Apple's website. "Strava uses the heart-rate sensor to gather and display data during workouts. And Insteon lets you use the Digital Crown to control your house lights."

3. Time Travel

WatchOS 2 will introduce a new Time Travel feature. You will be able to turn the Digital Crown on the side of the watch to see what happened yesterday, what you have planned for today and what's scheduled to happen tomorrow. Apple has given a few examples of Time Travel's usefulness, including checking what the weather will be like for your lunch date tomorrow, or looking back over the headlines you may have missed earlier.

4. New Watch faces

The watch face is the gateway to this device, so watchOS 2 offers even more customisation options. These include new Time-Lapse faces that show videos shot over 24 hours in iconic locations around the world including New York, Hong Kong, London and Shanghai.

There's also a Photo option that lets you pick an image from the Photos app on your watch, and if one picture isn't enough there's a Photo Album feature, which displays a different image every time you raise your wrist.

5. New complications

Closely related to the previous feature is the new complications customisation. Complications are the extra bits of information you see on the watch face, and in watchOS 2 you'll be able to customise these to show data from apps such as flight times or even how much charge your electric car has left.

6. Nightstand mode

Apple has realised that you might want to use the Apple Watch even when you're

1.

2.

11.

not wearing it, which typically is going to be at night when you're charging it. WatchOS 2 will introduce a Nightstand mode that lets you place the device on its side and connect the charger to show the time, date and alarm time. If an alarm sounds while in this mode, you can press the side button to turn it off or the Digital Crown to snooze.

7. Respond to emails

If you don't yet own an Apple Watch, you might not realise that you can't currently respond to emails on the device. You can read them, but replying requires getting out your iPhone. With watchOS 2, you'll be able to respond by tapping reply and dictating a response, choosing an emoji or selecting a preset reply.

8. Add more friends

You'll be able to add more friends to the Friends feature of your Apple Watch with watchOS 2. Right now, you can only have 12 across one screen, but soon you'll be able to add multiple Friends screens with up to 12 contacts each. You'll also be able to add friends directly to your Watch, rather than having to add them to your favourites on your iPhone.

4.

9. Public transport information

This isn't going to apply to everyone because it's rolling out pretty slowly, but with iOS 9, which we think will launch at the same time as watchOS 2, public transport information is being added to Apple Maps. The reason it won't apply to everyone is that it will only be available in select cities to begin with, and just London within the UK.

10. Activation Lock

This feature should make you feel slightly less concerned about what will happen if you lost your Apple Watch, because it means you'll be able to remotely enable Activation Lock to prevent anyone from using the device but you.

11. Colourful sketches

This one's a bit of a gimmick, but if you use the Digital Touch app, you'll now be able to draw better sketches using different colours on the same canvas.

12. Improved Siri

Siri is getting better in watchOS 2. It will now be able to start a workout, check your glances and look up words.

Develop Apple Watch apps

HOW TO MAKE THE MOST OF WATCHOS 2 AND CREATE YOUR OWN APPS

By Nik Rawlinson

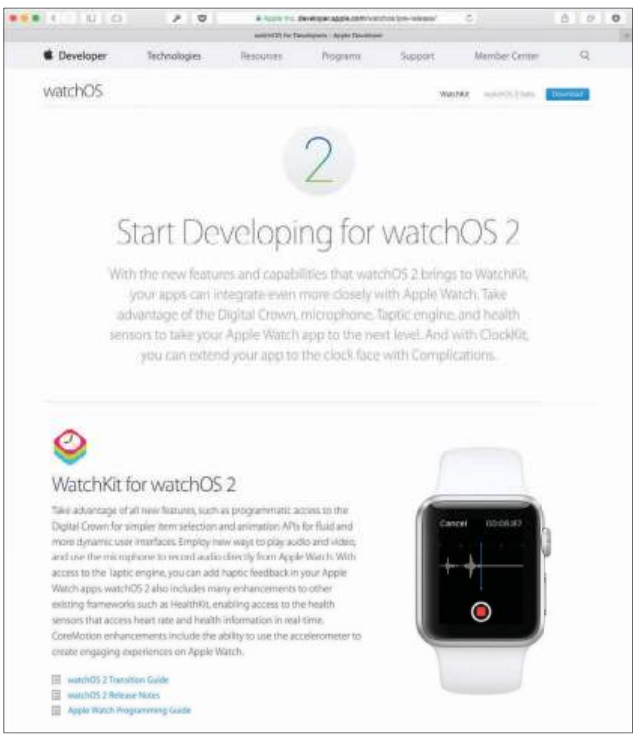
The biggest news at this year's WWDC centred on Apple's smallest product – the Apple Watch. It was far too soon to announce a new model (and in the Tim Cook era, WWDC has moved away from being a forum for hardware launches) but that didn't stop Apple announcing a new operating system for its first wearable, watchOS 2, which will arrive on wrists this autumn.

What's new in watchOS 2

WatchOS 2 opens up more of the hardware's core functions, allowing developers to shift greater responsibility for an app's 'intelligence' from the iPhone to which it's tethered, to the Watch itself. That effectively turns the Watch into a fully-fledged wrist-worn computer that can perform a wide range of tasks on its own before it next connects to the iPhone by Bluetooth.

The OS gives developers access to core components like the Digital Crown and mic. That means you could write an audio note-taking application, which would store all of the user's memos while away from the iPhone and only offloads them the next time it connects. At the same time, because watchOS 2 opens up the internal audio system, you can allow those same users to play back their memos right away, or have them played to a schedule when the memoed tasks were due.

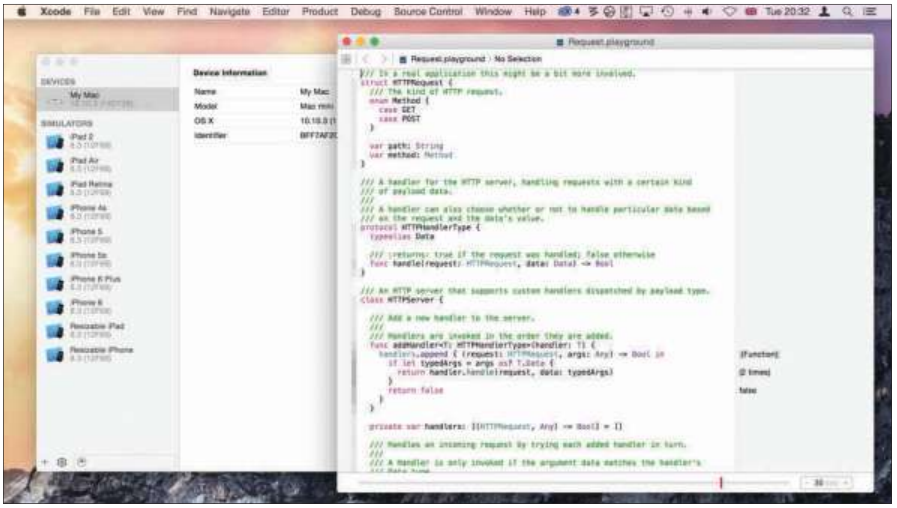
The update to watchOS was one of the biggest announcements at WWDC 2015.



Additional Complications

ClockKit, which is new in the latest edition of Xcode, lets you target the Watch face itself with something Apple calls Complications. These are additional readouts that sit alongside the dial to and show information from apps installed on, or syncing to, the Watch. When you code a complication into your app, your users won't have to switch to it to see notifications and updates.

Volkswagen's Car-Net app not only lets users lock their vehicle remotely and locate it when they've forgotten where they've parked, but it also monitors the charging status of the electronic e-Golf and shows the battery level as a Complication that takes the form of a VW logo with a circular bar at the edge that gets closer to completion as the battery charges. Turning the Digital Crown to roll forwards or backwards moves the bar to no longer show the actual charge but the anticipated charge at the selected time, so you'll know if you have sufficient power to complete a planned journey.



Xcode is Apple's development environment for working on iOS, OS X and watchOS apps.

(If you're wondering why Apple would choose such an intimidating name as 'Complications' for these nuggets of information, it's actually a standard watch-making term that's been used for centuries to describe the extra dials on a regular clock face that are used to show non-core timekeeping information, such as the date or phases of the moon.)

Incentives to code for watchOS

It's no exaggeration to say that opening up these extra features is big news for developers, on a similar scale to Apple's decision to ship an SDK (Software Development Kit) for the iPhone when it relented on its web app-only approach with the roll out of the iPhone 3.

It makes the Watch a more tempting platform to work with – particularly as competition within that app market isn't yet so fierce as it is for iOS and OS X.

So, where should you be looking if you want to get a head start on the road to writing Watch apps yourself?

Developing with Xcode

Xcode is the go-to development suite for watchOS, iOS and OS. The latest stable release is free to download from the Mac App Store. Developers can get their hands on the beta release of the next edition here. You can join them if you sign up to the Apple Developer Program, which is free and requires an Apple ID.

Since version 6, Xcode has supported Swift, but only the beta release of Xcode 7 so far supports Swift 2. As well as helping you to design layouts visually and write the code that underpins them, Xcode will check your work for errors and compile it into executable runtimes that you can distribute yourself or sell through the App Store or Mac App Store.

How to learn Swift

Apple introduced Swift at WWDC 2014 as the replacement for Objective-C, which until then was the base language for developing iOS and OS X applications. This year, as well as extending its feature set with the unveiling of Swift 2, it made the language open source and announced forthcoming support for Linux.

Volkswagen's Car Net system is coming to the Apple Watch, and includes a Complication that shows your available charge on the watch face screen.

The best introduction to Swift is Apple's own documentation – tinyurl.com/o6hhn2o. It assumes no prior knowledge of the language and although familiarity with variants of C would help, it's by no means a requirement. Simple steps individually introduce key features of the language – such as constants and variables – so you can break off and pick up as required. That makes it much easier to brush up your skills in spare moment while working around a regular job.

It's not always convenient to switch between a browser window and your coding environment though, (and you won't always have internet access) so we'd also recommend downloading Apple's free 521-page book, The Swift Programming Language, from iBooks. The most recent revision is available as a pre-release edition that's been updated for Swift 2.

Web tutorials for Swift

The best way to learn a new skill is often to see how others are using it. Learn Swift Tips (learnswift.tips) maintains a large, curated collection of links to online Swift tutorials and how-to advice broken down by ability. It caters for everyone from absolute beginners to advanced developers and, beyond these, there are further links to books, code libraries and examples that not only save time but also show the code in use.

The best approach to writing your first app, if you don't already have experience of coding for the iPhone or Mac, is to take it slow and steady. Small steps in the early days will help you to consolidate what you're learning, and starting with a modest personal project, rather than something you plan on selling, is the best way to hone your skills without becoming disheartened if you find the work overwhelming.

How to use the Activity app

GET FIT AND HEALTHY WITH THE APPLE WATCH'S ACTIVITY APP

By David Price

The Apple Watch's Activity app is designed to help you get fit and stay healthy. It does this by setting and tracking three daily targets: to sit less (your target is to stand for at least one minute in each of at least 12 separate hours), to move around more (measured according to the calories you burn), and to log 30 minutes of brisk activity every day.

The Activity app is accessible from the Home screen. Press the Digital Crown to go the Home screen and tap the icon showing three concentric coloured rings – red, green and blue.

Getting started

Tap 'Get started' and fill in your personal details: sex, age, weight, height, and so on. (When entering information, it's generally more accurate to scroll up and down through possible answers using the Digital Crown rather than swiping up and down on the screen.)

Bear in mind that you can skip some of the details if you're in a rush or if, like us, you don't know your height in cm or your weight in pounds. But coming back afterwards to add this information (which presumably helps the Apple Watch to produce more accurate assessments of your calorific performance) is actually a bit trickier than you might think. (We explain how to do this in the next section.) Next, you tell the Apple Watch roughly how active you are at the moment. Apple advises you to aim on the low side if you're not sure.

The Apple Watch will take your inputs and use them to generate a (suggested) daily calorie burn goal. But you don't have to accept this; scroll up and down with the Digital Crown to fine-tune your starting goal.

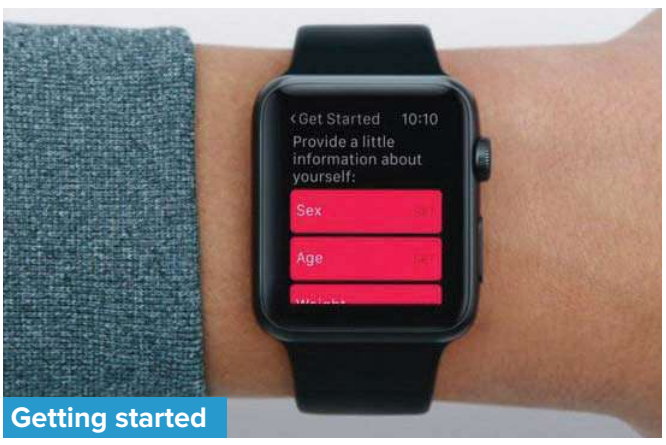
Tap the red Start Moving button to complete setup and, well, start moving.

Change your weight or height

Sadly, if you skip the height or weight section of setup and want to go back and add them (or if your vital statistics change, of course), it's not as simple as opening the Activity app and going to the settings. In fact, you can't even enter the details on the Apple Watch – nor is this accomplished in the Activity app on the iPhone, or even in the Activity section of the Apple Watch app on the iPhone.

You'll need to go the Health section of the Apple Watch app on the iPhone. No wonder people can't find it.

Open the Apple Watch app on the associated iPhone. From the My Watch tab (the left-hand tab from the options along the bottom of the screen – it should be opened by default), scroll down and



Getting started

Daily targets

select Health. You'll see the four bits of personal information you entered earlier, with 'Not Set' for the ones you skipped.

Tap Edit at the top-right, then tap the entry you want to change. Swipe to the correct value, then tap Done.

View your daily targets

Want to see how you're getting on? The Activity app's three rings can be viewed in your glances, so swipe up from your default watch face and swipe sideways until you get to the ring view.

(You can also add the Activity app to your watch's face for even easier access – press down firmly on the watch face, select a face and when customising, choose to add Activity information to the face. This gives you at-a-glance information on your daily targets, and allows you to tap the mini-icon to jump to the Activity app for more detail.)

Your daily progress towards these three targets is tracked by three coloured concentric rings: the red outer ring tracks calories burned, the green middle ring tracks exercise, and the blue inner ring tracks standing. (There are also arrow-based icons to help you remember which is which: a single right-facing arrow is calories burned through general movement, the double right-facing arrow is brisk exercise, and the upward-facing arrow indicates standing.)

When the red or green ring completes one circle of the watch face, you've completed that target. The progress of the blue ring is slightly more complicated: it shows the number of hours in which you have stood for at least one minute, out of a target total of 12.

Scroll upwards using the Digital Crown to see calories, steps and distance covered so far today. Alternatively, you can swipe sideways to view individual rings and get more detail on that target. You can scroll upwards from each ring (using the Digital Crown) to see the activity presented in a graph, by the way.

The red Move ring

The red Move ring shows the number of calories you've burned so far via general movement (the large number) and the target for the day (the small number). As with all the rings, the progress of the ring around the watch face shows how close you are to your target: this is set during setup, but you can adjust the target at any time as we explain below.

Change the Move goal

As you get fitter and healthier, you'll want to step up your daily calorie target. The Activity app will suggest new targets automatically each week, but you can manually change the target too. Go to the red Move ring screen, press firmly on the display and tap Change Move Goal when it appears. Scroll up and down with the Digital Crown until you're happy with the new target, then tap Update.

The green Exercise ring

The green Exercise ring counts up the minutes in which you've been exercising 'briskly', which in practice includes dancing and reasonably strenuous walking as well as formal workouts and runs. The target is 30 minutes per day.

From our experience with the watch, there's a slight delay effect. When walking briskly to the station from home, for instance – a walk of 15 minutes – we were disappointed to find when sitting on the Tube that only seven minutes had been added to the green ring. Yet by the time the train pulled in at the other end it was closer to 20.

We suspect that heart-rate monitoring is the issue: logically, it will take a little while to get your heart pumping, so early sections of a period of exercise may not register, yet your heart may take time to get back to normal afterwards. It seems to roughly even itself out.

The blue Stand ring

As explained above, the blue Stand ring is designed to encourage you to sit less and stand up more. You're supposed to stand for a minute each hour, and the blue ring tracks the number of hours in which you've achieved this. The target is 12 hours, each containing at least one minute of standing, per day.

Just standing doesn't always do the trick, though. Many Apple Watch owners have found that a bit of movement is needed to make the device register what you're doing – hop from one foot to the other a few times, or stroll around a little. Go and get a cup of tea.

View information on the iPhone

Remember that you can use the Activity app on the iPhone at any time to get more information about your progress: graphs of your activities over time, for instance, and resting as well as active calories burned. You can also view your achievements ('Perfect week' and so on), if that's something you're into.

Move ring

Exercise ring

Simplicity key to success

WHY GROWING LIST OF FEATURES PUTS APPLE WATCH'S SIMPLICITY AT RISK

By Jon Phillips

If I were Tim Cook right now, I wouldn't be worrying about Apple Watch sales potential. Oh, it will sell. The new TV ad is inspiring, and the stainless steel polish on these watches looks amazing. Add in Apple's trademark surprise-and-delight, and all signs point to long lines on launch day.

I'd be more concerned about people using the Watch than buying the Watch packed silly with features – far too many of them borrowed from the catalogue of smartwatch failures.

A troubling number of smartwatch owners eventually toss their gadgets aside. The most detailed data on this problem, a July 2014 Endeavor Partners study (tinyurl.com/obx4d9k), tells us that about a third of all smartwatch and fitness band owners abandon their wrist wearables after six months.

Poor battery life certainly contributes to attrition rates. Aside from the Pebble, you need to put nearly all smartwatches in their charging cradles before you go to bed. Forget to do so once, and you blame yourself. Forget to do so twice, and you blame the watch. Forget to do so thrice, and you begin losing interest entirely.

The Apple Watch battery is rated for 18 hours, so users will need to be vigilant about recharging. Trust me: I've been reviewing smartwatches since they became a thing, and once you run out of juice the first time, you're already on the path to giving up. It's a secondary device. It's not essential like your phone. So giving up is easy.

But the Apple Watch faces exposure to an even bigger problem: feature bloat. It's an issue that plagued Samsung's Galaxy Gear, and now, inexplicably, Apple is following Samsung down the same dangerous path.

Just because you can add a feature doesn't mean you should. Yet Apple confirmed that the Watch will allow voice calls from your wrist, just like Samsung's Gear, an ambitious but seriously flawed smartwatch pioneer. The Gear's speaker is too weak and tinny to cut through wind and crowd noise. It's a mission-defining parlour trick that breaks your heart.

Have Apple's engineers made good on Samsung's broken promise? We're not convinced that we'll be using it in a noisy location, and the audio quality is certainly nothing to write home about. But simply copying Samsung's Dick Tracy trick is alarming. The world's cruel pundits don't really care about Samsung, and none of them will ever remember the Galaxy Gear.

Wearables like the Samsung Gear Fit only taught us that heart rate spot checks are a checklist item, and not much more.

But if voice calls from the Apple Watch aren't worthy of Dick Tracy, all the papers will write about it.

Then there's the Apple Watch's heart-rate glance, which shows your heart's beats-per-minute whenever you initiate a spot check. It's a ubiquitous feature on all Samsung watches, and you'll also find it on every Android Wear watch. But it's also essentially useless, as none of these watches' heart-rate sensors can provide accurate real-time readings during the jumping and jostling of physical exercise.

I suspect that about 98 percent of all Android users will tell you they never use their smartwatch's heart-rate feature. For this reason alone, Apple has diminished its essential brand promise by including this frivolous, me-too feature as well. It's noise, not utility. It's bloat, not function. But tests have suggested the results are accurate, even compared to a heart-rate monitor, and Apple certainly is putting a lot of weight behind this analysis as part of its health drive.

I'm cherry-picking two very obvious copycat features, but the Apple Watch is packed with many more, from mail alerts to workout programs to mapping directions to even generous support for third-party apps. You could argue that some smartwatch features are must-haves, that a smartwatch isn't a smartwatch unless these features are present and accounted for. But the problem: smartwatches have not been a resounding success.

So why emulate mediocrity? I think the Apple Watch is stronger for offering simple notifications, Passbook with built-in Apple Pay, HomeKit integration (which is coming with watchOS 2), and a full suite of timekeeping and personal messaging functions. In other words: all Apple, all the time. Addition via subtraction. Give users a relatively small set of exquisitely engineered and incontrovertibly useful features, and then drop the mic.

Of course, once you get your Apple Watch, you can choose to use just a short list of features and ignore the ones that don't appeal to you. You may find that a watch that tells the time, pays for coffee, opens doors, and sends haptic heartbeats to loved ones is all you ever need. Indeed, Apple's small, ostensibly trivial surprise-and-delight tricks (taps, sketches, stickers, and custom animated emojis) might be all the Watch requires to be a resounding success.

But there's still something deflating about a watch – or any product – that's jam-packed with stuff you never use. You begin to question whether you're getting your money's worth.

We will never hold our computers and smartphones to the stringent requirements we ask of smartwatches. We have to have a computer and phone. But a smartwatch? Probably not. So while you might buy the upcoming Apple Watch, you may not buy its second-generation follow-up if you feel you didn't get your money's worth, or some borderline features just didn't work. And that's not just bad news for Apple. It's bad news for Samsung, LG, Motorola, and all the other mobile companies looking for salvation in an entirely new product category.

Does a smartwatch really need a full suite of fitness features? Certainly not if they just add to the noise.

New and noteworthy

THE BEST NEW iPAD, iPHONE, APPLE WATCH AND MACBOOK ACCESSORIES

By Lewis Painter

Cowin Ark »

£149

cowinmusic.com

The Ark is a two-piece Bluetooth speaker setup by Cowin, and looks to be one of the more interesting speaker systems on the market. The top part, called Cruze, is a Bluetooth speaker that has two drivers and passive radiators with an eight-hour battery life, while the bottom section, called Ark, houses a 5in ported subwoofer. What makes this 35W setup so cool is that the two parts of the system are wirelessly connected, and whenever the Cruze is sat on the Ark, it's wirelessly charged.

Moov Now »

$99 (£64)

moov.cc

Dubbed the 'Siri of Sweat', the Moov Now fitness tracker doesn't only track exercise, but also provides you with audio and visual guidance on a range of activities via an iOS app. For example, when running, it will advise you on when to land softer, shorten your stride or pick up the pace. The device is compatible with 12 exercise programs, as well as 200 variations and levels of run and walk, swimming and cycling. Its battery is removable, and the company claims it should last around six months before needing to be replaced.

Smarter Coffee Machine »

£179

smarter.am

Controlled via an app on your smartphone, the Smarter Coffee Machine's manufacturer claims that it's the world's first bean to cup smart coffee maker. It can even be programmed to make your morning coffee, allowing you to wake up to the smell of freshly ground coffee. You're able to select everything from strength to bean grind preferences, and even the temperature of your coffee. It's been developed to work with Apple's HomeKit and other major wearable devices, which means that if your sleep tracker notices you had a bad nights sleep, your coffee machine will recommend a stronger coffee when you wake up.

XSories X-Steady Electro 1

£179
xsories.co.uk

The X-Steady Electro is an electronic stabiliser that aims to transform your shaky iPhone videos into smooth cinematic masterpieces. To do this, it uses HorizonDrive technology, which should ensure compositions remain on point and steady. The best part? It'll fit not only your iPhone, but almost any smartphone, as well as GoPro's and many other action cameras.

Marvin's iMagic Interactive Box of Tricks

£24
marvinsmagic.com

Marvin's Magic, famed for teaching children how to perform magic, has been reinvented for the next generation and makes use of something most of us own; an iPhone. The set of tricks uses a combination of video magic effects via the iMagic app, coupled with traditional close-up magic, with the aim of entertaining and inspiring a new generation of magicians, according to the company. The mixture of new and old styles is ideal for today's budding magicians, and allows them to sample the advancements that modern magicians are using.

CATWALK THE BEST-LOOKING CASES FOR YOUR iPHONE

Native Union CLIC 360° for iPhone 6 and 6 Plus
£34.99
nativeunion.co.uk

Proporta iPhone 6 Plus bumper
£9.95
proporta.co.uk

Ted Baker Hex Leather Folio for the iPhone 6
£29.95
proporta.co.uk

21 iOS 9 tips

OUR GUIDE TO iOS 9'S FEATURES WILL HELP YOU MASTER THE NEW OS

By David Price

1. Teach iOS your routine

iOS 9 has arrived (in beta form, at least, but the final version will be with us very soon), and we're enjoying its plethora of new features. In this article we're going to walk you through some of our favourites, and help you to master the new features. We'll start with a little something we call 'Proactive'. This tries to stay one step ahead, always doing its best to work out what you'll want to do next and then offer a shortcut to that behaviour.

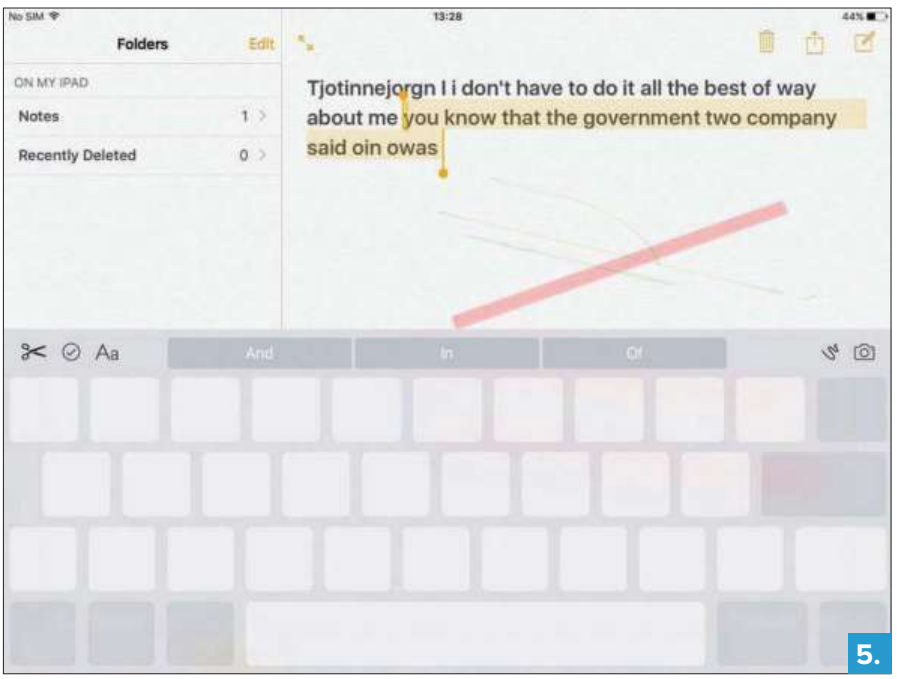
Ring your mum at a certain time each week? iOS will start placing her contact icon in your Search screen when the appointed hour approaches, so you can make the call with a single swipe (left from the first Home screen/pane, or downwards from any Home screen) and tap. Like to hit the tunes at the gym? You'll get a Now Playing in the lock screen at the usual time, or when you plug in the headphones.

How do you get these conveniences? Just use iOS as much as you can: it'll soon learn. And look out for the shortcuts. Remember to browse the Search screen to see how much iOS has picked up about your habits.

2. Have two apps onscreen at once

This one is just for the iPad. The simple form of multitasking involves opening any app and then swiping inwards from the right-hand side of the screen. You'll see a slim sidebar where you can pick another app, and have it open in that part of the screen while the first app remains visible in the rest.

Handy for various work scenarios: viewing an email and copy-and-pasting important elements into a Notes document open in the main window, for example, or viewing a journey in Maps while noting down directions.



5.

3. Have two tasks on the go at once

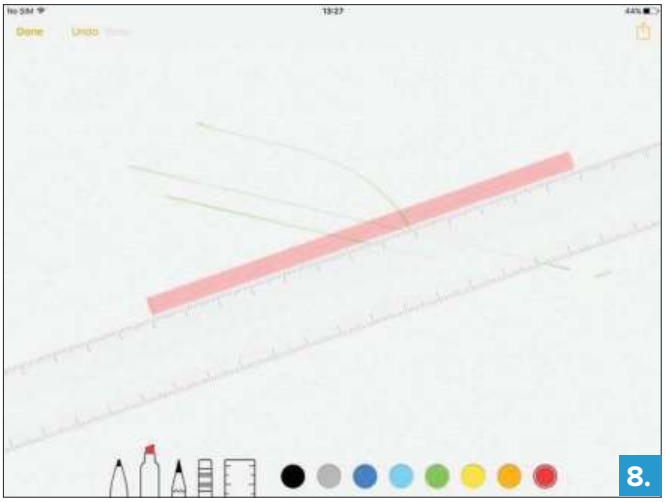
If you've got an iPad Air 2, you can take iOS 9's multitasking elements to the next level, by having two apps running side by side, and interacting with them both at the same time. This function is called Split View. You can also change the screen space devoted to each of the two apps, although the default appears to be 50/50.

4. Picture in Picture

The third aspect of multitasking in iOS 9 is called Picture in Picture, and allows you to watch video clips and television programmes while working in other apps. On the Mac this sort of thing is easy: just run a video and place it in the corner while you work. On the iPad it's not been possible – until now.

Apple's new Picture in Picture mode moves the video into the bottom corner of the screen, while you carry on using another app. Whenever you're watching a video, you just have to press the Home button to tell iOS 9 to shrink the video screen down to a corner of your display. You can then open another apps normally, and the video will keep playing in its little window.

Picture In Picture works with Apple's video (the video you're watching can be live FaceTime video) and third-party apps can use Apple's SDK to implement PIP mode in their app. We hope the BBC implements it for iPlayer, and Google does likewise for YouTube.



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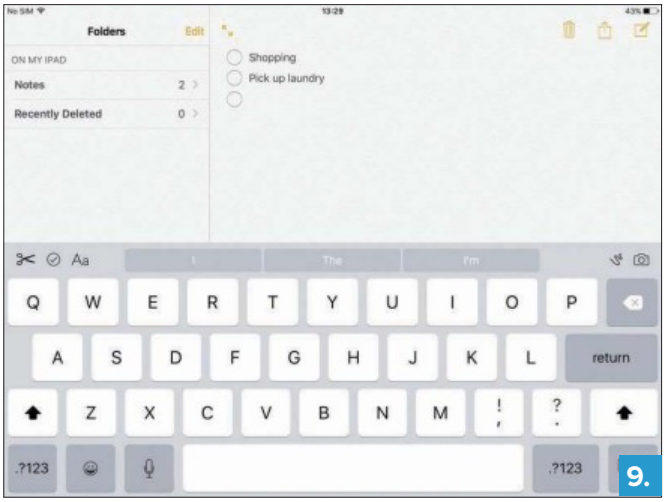


9.

5. Keyboard cursor

Let's look at the system keyboard next: it's not glamorous, but it underpins almost everything you do on an iOS device.

First up, and most ambitiously, Apple has given iOS 9's system keyboard the ability to move around a document with a virtual cursor. Simply tap and hold anywhere on the screen with two fingers at once, and the keys will all grey out. From now on, moving the two fingers will move the virtual cursor, automatically selecting any text between the original point where you started and the new place you've moved the cursor to.

It's tricky to get used to, even though Apple calls the function 'Easy text selection', and in the beta version of iOS 9 that we've been using quite buggy. But we love that Apple is trying new things.

6. Shift key

We're back in the realm of mundanity now, but this is an important enhancement. The Shift key in iOS used to be deeply ambiguous, switching colour between the white of the normal keys (off) and the dull grey of the special keys (on) without most people being able to remember which was which.

Rather than adding colour to the On state, as some expected Apple to do, they've made the entire set of keys change from upper- to lower case, so you know exactly what's going on.

7. Shortcut bar

The final stop on our tour of the keyboard concerns the new icons that sit either side of the QuickType suggestion bar. These are shortcuts for common commands. Depending on the app you're in, the shortcuts will vary, but you'll always get Cut (scissors), Copy (a square and dotted square) and Paste (a solid square and clipboard). If space is tight, however (such as in Notes), these three may be hidden together under a single icon: the scissors. Tap it to reveal the full palette of options.

Notes adds shortcuts for formatting options (a capital A and a lower-case a), to-do lists (a tick in a circle) and sketches (a squiggle), both of which we'll discuss in later slides.

Other apps may offer a camera icon for adding pictures and videos; a paperclip for adding attachments; bold/italic/underlined letters for more formatting options; and so on. As you can see, most are self-explanatory. Experiment if you see one you don't recognise: there's no 'delete document with no confirmation' icon, as far as we're aware.

8. Add sketches

Let's return, then, to the neglected Notes app, which in iOS 9 has had a few new features added.

Most appealingly (at least to us) is its new support for quick line sketches. Tap that squiggle icon we mentioned in the last slide, and Notes will open a new window where you'll compose the sketch you wish to add to your document. Colours are selected along the bottom, as are pens and pencils of varying weight and texture (in fact, there are really only three options – from left to right: a straightforward thin pen line, a highlighter pen that will let pen lines show through it, and a thin, textured pencil). You can also remove lines with the rubber.

Most fun of all – if digital stationery can ever be so described – is the ruler. Tap it once and it appears on the sketch; tap it again and it disappears. This can be moved around with a single finger, or rotated with two. And at any moment you can sketch along the edge of it with whichever pen/pencil tool you had previously selected (there's no need to 'deselect' the ruler and pick a pen).

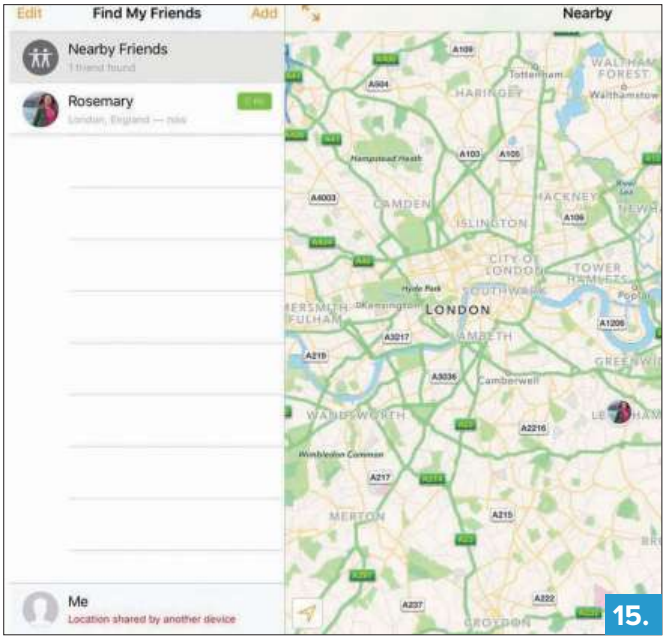
There's an Undo and Redo at the top of the window; tap Done to save the sketch in your document. (You can also share or save the sketch on its own – use the sharing icon at the top right.) If you decide you want to modify the sketch after this point, tap it once in your document and the sketch-editing window will open again. Tap Done to return to your document, complete with updated sketch.

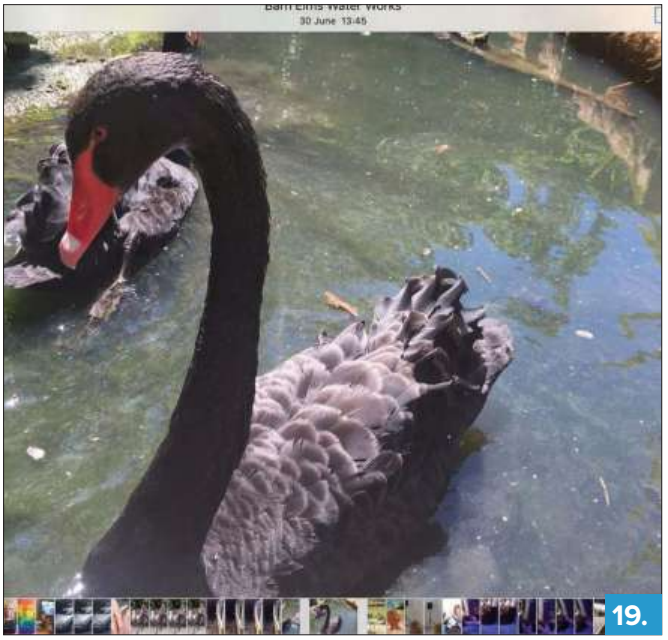
Finally, you can see which of your Notes have sketches attached, because a thumbnail of the sketch will appear to the left of the document's entry in the list of files. If you've included two or more sketches, only the first will be shown.

Read more about Notes on page 72.

9. Add to-do lists

This one won't take as long. But it can also be useful. Having taken on board the fact that many iOS users turn to Notes for shopping lists and other forms of the





to-do list, Apple has made it easy to add tick boxes next to items on a list, so that you can make a note when each one is accomplished without having to delete it from the list entirely. (This can be handy for repeat lists that need to be performed every day, for instance, or a regular shopping list that is bought in whole or part on a semi-regular basis.)

Highlight your list, using the traditional method or the virtual cursor we mentioned above, and tap the tick-in-a-circle icon. They will immediately turn into tickable action points. Tap the same icon again to revert to a normal list.

You can also hit Return to start a new line, and tap the icon once to create a single tick box that you can then write a caption for, if you'd prefer to do things that way round.

10. Formatting

Notes now has more sophisticated formatting options. These are now accessed via the capital A/lower-case A icon, instead of from the options bar.

The app has seven text styles (as well as the previously available bold, italic and underlined styles), but three of these are available as a starting default: Title, Heading or Body. You can decide which one the app defaults to when you start typing in a new document by going to *Settings ➜ Notes ➜ New Notes Start With*. If you select Title or Heading, Notes will default back to the Body style for the second and subsequent paragraphs.

11. Public transport directions

If you're planning a journey and don't own a car, Apple Maps was no help at all in iOS 8, lagging years behind its Google counterpart. But iOS 9 adds public-transport directions at last.

Search for a location, then tap Directions at the top left to bring up that section. Select the Transport tab.

Choose the route you wish to take from the options given, then tap Start at the foot of the page. Maps will guide you through your journey.

Alternatively, you can jump to directions from the pin that appears when you run the original search. Note that the pin has a time and a walking icon next to it; tap this and you'll open walking directions. Tap the Transport tab to revert to public-transport directions instead.

Bear in mind that, as far as the UK goes, public-transport directions will be limited to London. The list of supported cities is a bit surreal: six US cities, Toronto and some nearby cities in Canada, London, Berlin, Mexico City, and then more than 300 locations in China.

12. Power-saving mode

Here's a small but potentially huge change that we've been demanding for years: a systemwide battery-saving mode.

Whenever your iPhone (and as far as we can tell it only works on iPhone, so far at any rate; a later beta may add iPad support) drops below 20 percent power, a message will pop up to warn you of this fact and to offer Low Power Mode. Tap this to reduce animations throughout the system, decrease the time before the screen darkens, and generally make every effort to eke out your battery life for a little longer.

You can activate Low Power Mode at other times: look for the option in the new Battery section of Settings. (It's in the same grouping as the General section, and has a green icon.)

You can tell that Low Power Mode is in effect, by the way, by looking at the battery indicator at the top of the screen: whereas this is green when above 20 percent and red below, it will be orange if in Low Power Mode.

13. Apple News

Apple has been trying to bring better reading experiences to the iPad. Joining iBooks and replacing Newsstand is Apple's new News app.

If you've used Flipboard, then, you'll have a pretty good idea what to expect. News aggregates news stories from around the world and brings them to your iPad.

When you first launch News, you'll be given a range of news outlets to choose,

such as the *Daily Mail* or *Vanity Fair*. Then you'll get news stories from those organisations into your News app.

14. Wallet

Wallet is the new name for Apple's Passbook app. The name change reflects the prominence of Apple Pay in the app. Although Apple Pay is out in the UK already, it will be a lot more useful when iOS 9 arrives.

Wallet isn't just a name change, though. A great new feature is Loyalty Card support, so you can now pay for items in your favourite stores and get automatic loyalty card points.

15. Back button

Google Android devices have always had a Back button that takes you back to the previous screen or app.

While Apple isn't going so far as to add a new button alongside the simple Home Button, the company has added a new Back to... option in certain contexts when you're using iOS 9.

If you navigate from one app to another using the Notification pull-down or other direct jump, you'll notice a new 'Back to...' icon in the top-left of the screen. This new button takes you back to the previous app. (The option doesn't appear if you went back to the Home screen between apps.)

Similarly, if you go to the search page (swipe right from the starting Home screen) and select an option from there, you'll be given the option to go back to the search you ran.

We think this will be a very handy new tool to use, and generally makes navigation between apps a little more user-friendly.

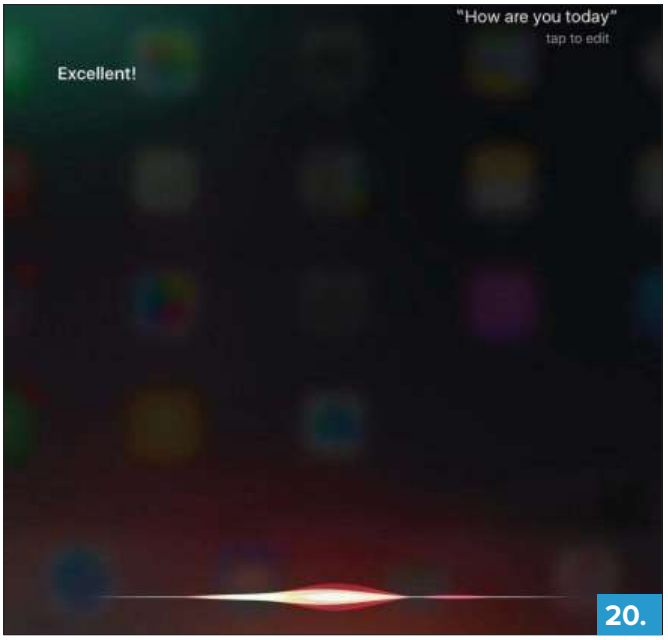
16. Android Migration Assistant

Apple is making it easier than ever to migrate (we might choose to say 'upgrade') from a Google Android device to an iPhone.

A new app called Android Migration Assistant helps move all of a user's data over from their old phone to the new one. It transfers contacts, email accounts, music, photos, web history, wallpaper, as well as any DRM-free songs and books.

It also goes through the apps on a user's old Android phone and suggests equivalents on the App Store. Apps you've paid for on Android are added to the iTunes Wish List.

A nice idea, but wouldn't it be great if Apple could go one step further and negotiate with app developers to offer discounts to iOS users who've previously bought an app on Android?



17. iCloud Drive app icon

The iCloud Drive app has always been a bit of an oddball. Rather than being a discrete app, like Mail or Calendar, it sits behind the scenes and pops up inside other apps when needed.

One great new feature in iOS 9 is an option in Settings that turns on the iCloud Drive app, so it appears as an icon on the home screen. This enables users to access the files in the iCloud Drive.

18. Toggle flash light on (and off) while recording video

When recording a video, you can turn on the LED flash on an iPhone to light up the scene. This is great, but sometimes you don't need the flash on all the time.

It's a small touch, but in iOS 9 you can switch the LED Flash on and off during the recording of a video. So if you start recording a video and realise that you need a bit more light, iOS 9 will be able to deliver.

19. Improved Photos app

The Photos app has had a few upgrades that make it easier to scroll around all your images. When you open an image, you'll notice a new thumbnail strip. Sliding your finger across the thumbnail strip moves you quickly through the photo gallery. Another new gesture is a swipe down on Photos. This dismisses the photo and moves you back to the Albums view. You can also hide multiple photos at once using the Share Sheet.

20. Siri is more polite

Siri is famous for its wise-cracking answers to your questions, but in iOS 9 it gets a little bit politer.

When you mute your iPhone, Siri will no longer speak replies. Instead, it'll be quiet and just listen to your requests (and display answers on the screen). Siri also vibrates your iPhone to indicate when it's ready, rather than making noise.

Don't worry. Siri is still as smart-mouthed as ever, and we're sure it's only going to get smarter as time goes on. And don't forget all the funny Siri responses you can enjoy.

21. Find My Friends and Find My iPhone now default

It's a little thing, but Apple is going to include Find My Friends and Find My iPhone as stock apps from iOS 9 onwards. We think Find My Friends and Find My iPhone are both fantastic apps, and most iPhone and iPad owners are well aware of their existence. However, by achieving the default app status, they'll be present on all iOS devices, so there's no excuse for anybody not to sign up. People are certain to complain that Find My Friends can't be deleted, though.

Meet the new Notes

NOTES IS NO LONGER THE MOST BASIC NATIVE APP IN iOS

By Caitlin McGarry

The Notes app for iOS has always existed as a utilitarian way to quickly jot down whatever comes to mind. It's devoid of fuss, which is perfect for times when you just need to make a quick list, but the lack of features opened the door to other, better note-taking apps such as Evernote, Awesome Note and OneNote.

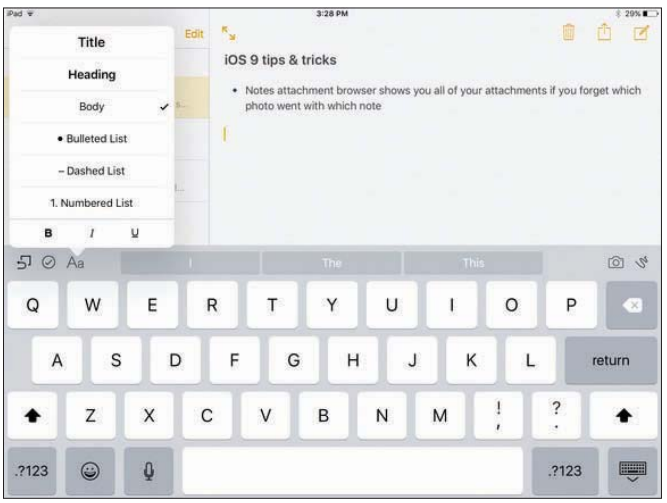
But in iOS 9, Apple's native note-taking app catches up to those feature-filled rivals from third parties – and if you don't need a cross-platform solution, Notes might just become your go-to organiser.

Formatting

The most obvious change when you start to add text is formatting. You can finally adjust font size by selecting the title, heading or body – you don't have a range of font point sizes to choose from, but those three sizes are enough to get started. Bold, italicise, underline are all new options. You can make lists useful with bullet points, dashes and number formatting, plus you can turn a task into an item to be checked off with just a tap. Entire notes can be turned into checklists, or you can make specific sections of your text into to-dos to be checked off.

Sketches and photos

Notes supported photos before, but not like this. iOS 9 lets you shoot images and videos from within the app in addition to choosing an image from your Camera Roll. You can also add sketches to notes, which is perfect for those who use a stylus with their iPads. Just tap the squiggle that marks the sketch function on the bottom-right side of a note, then pick between the pen, marker, or pencil and choose which of the eight colours you want to use. There's even a ruler that you can tap to lay on the blank sketch pad for more precise drawing.



Notes in iOS 9 gives you more control over the way your notes look.

Share sheet

But it's the share sheet I've been using more than any other Notes tool. Now when you use certain built-in apps, such as Safari, Maps and Pages, you can tap to embed a URL, map or page in a specific note. It's as simple as picking which note you want to add the card to. I'm expecting a slew of apps to integrate the Notes share sheet when iOS 9 officially launches this autumn, which will make note creation even easier.

And if you forget which note you've added an attachment to, iOS 9's attachment browser displays which items are attached to which notes.

iCloud sync

Using iCloud to sync your notes across your devices isn't new, but now you can add rich media to notes, the ability to resume a note on the go that you started on your Mac is even more convenient. You can shoot iPhone photos or videos and add them to notes you created on a desktop, and that information will be synced across all of your Apple gadgets.

If you were comfortable with the bare-bones Notes of old, you'll be delighted with these new tools. If you've found a feature-packed note-taking alternative, it's worth giving Notes a second look in iOS 9 – it might finally meet your expectations.

Mail in iOS 9

THREE CHANGES IN iOS 9 THAT WILL IMPROVE APPLE'S EMAIL APP

By Caitlin McGarry

Unlike Notes and Maps, Apple's native Mail app hasn't been given a makeover in iOS 9, but a few tweaks have been made that will make managing your email less of a headache. Plus, Mail reaps the benefits of iOS 9's iPad multitasking features, which are game-changing on their own.

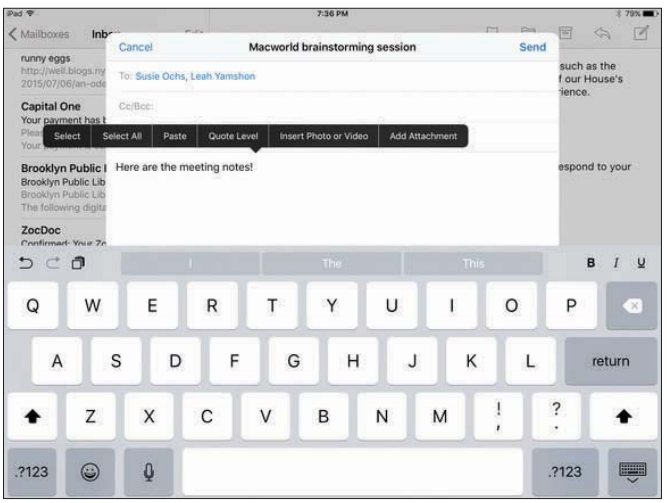
We've been playing around with Mail since the iOS 9 public beta opened two weeks ago, and here are the biggest changes you can expect when Apple's new mobile OS is released in the autumn. (Keep in mind that since this is a beta, features could change between now and the final release.)

Attachments

The biggest change is the long-awaited support for file attachments. Now you can attach a document with a long press in the body of a message. Before, your only option to add files to emails was to insert videos and photos. You can also save attachments by pressing on the file until the share sheet pops up with a new 'Save attachment' option. You can save to iCloud Drive or other locations, such as Dropbox, Google Drive, or another cloud storage locker (if you have those apps installed). You can select only one file at a time to add, at least in the beta, which is mildly annoying, but if you're trying to attach several files to one email, you're better off sharing a folder with the recipient.

Proactive search

Apple is finally reaching its goal of turning your iPhone, with the help of Spotlight and Siri, into the best digital assistant around. In iOS 9, the search bar now turns up results from Mail, like documents and contacts, when you enter in keywords. The ability for search and Siri to tap into Mail gets even more useful when a strange number calls you – Siri will jump into your email to see if the digits match any in your inbox. If someone sends you an email with a phone number, you can now easily add it to Contacts to prevent that unknown number issue.



Apple's intelligent search initiative combs through your email to bring up search results.

Multitasking

The trio of multitasking tools iOS 9 brings to the iPad are pretty good, but they give Mail specifically a big boost in terms of productivity. Sadly, you can only tap into these features on the iPad Air, Air 2, mini 2 and mini 3 (and Split View is exclusive to the iPad Air 2). But if you have a late-model iPad, multitasking with Mail is about to change your work routine.

Slide Over: In the beta version of iOS 9, you can only use the new Slide Over app sidebar with Apple's built-in apps, and Mail happens to be the perfect use case. Press on the right side of your iPad and swipe right to bring the app tray into your sidebar. From there, you can select an app to open in the right-hand third of your screen, so if you're composing an email and need to map your route to a destination, just pull up Maps and search for an address without leaving your message.

Split View: If you have an iPad Air 2, you can use Split View instead of Slide Over to read emails and view other apps side-by-side. Need to copy and paste details from Notes into an email to the boss? Split View is perfect. (Though you could do that with Slide Over, too.)

Picture in Picture: For those times when you have to get work done but your parents really want to have a FaceTime conversation (or you want to catch up on *QI* – no judgment), Picture in Picture is a great new way to multitask. You can move the picture around and resize it, so it doesn't block the email you're trying to read (or write), but it always remains the top window.

iOS 9 hasn't dramatically change the Mail app at its core, but little tweaks and systemwide multitasking tools make email slightly less awful to manage.

Maps' new features

WITH PUBLIC TRANSPORT INFORMATION AND NEARBY RECOMMENDATIONS, APPLE MAPS IS FINALLY CATCHING UP WITH GOOGLE MAPS

By Caitlin McGarry

Apple's native Maps app currently sits in a folder called Junk on the second page of my home screen, where I banished it as soon as it launched close to three years ago. Mainly because it lacked public transport directions. That's how I get around the city, and while Maps points you to third-party apps for underground information, I need an all-in-one solution. Google Maps tells me how to get where I'm going by foot, in a car, or on the train, so it's my go-to whenever I leave my flat.

But iOS 9 makes Apple Maps a strong contender with the addition of mass transit directions that, so far, are just as accurate as Google's. Plus, it has a bevvy of other improvements, like better communication with your Mac and some nice discovery features.

Public transport

I mapped my way to several familiar destinations to gauge whether the trains and routes Maps suggested were the quickest and most efficient ways to end up at my destination, and they were. Bonus time-saving feature: Apple Maps shows you where subway entrances are in flyover mode, which is incredibly useful. London St. Pancras has several entrances, but if you don't know where the closest one is, you could end up walking several blocks out of the way. Now entrances are helpfully marked 'Entrances' in Maps.

Nearby

Apple is taking a page from Yelp with a new feature called Nearby, which shows you shops, restaurants, places to drink, and other types of businesses around you or near the destination you enter in the Maps search bar.

Nearby is a welcome addition.

Being able to see businesses in the area is helpful, but getting to Nearby isn't exactly intuitive. You can't tap into it when you're getting directions, for instance. After you enter an address in the search bar and the map drops its pin on the destination, tap on the address in the search bar again – that's how you get to Nearby. A pop-up menu lets you get more specific. Tapping on 'Food' lets you see all food nearby, or you can drill down to supermarket, fast food, cafes, bakeries, dessert shops, and so on. I appreciate the Yelp integration, it means I can see if that restaurant I've never heard of is well-reviewed or one to avoid.

Handoff with El Capitan

Handoff between your Mac running OS X El Capitan and your iPhone running iOS 9 is nearly identical to the experience between Yosemite and iOS 8. Just double-tap the Home button on your iPhone or iPad and look for the Maps pop-up on the bottom of the screen to grab the Maps info stored on your Mac.

If you're on your Mac, look for a pop-up in the bottom-left corner in your Dock to launch Maps info shared from your iOS device. It's a pretty seamless experience, and works with all of Maps's features. Beam transit directions, Nearby info, or whatever you'd like.

iCloud Drive

NEW TO iOS 9, iCLOUD DRIVE MAKES IT EASIER TO ACCESS THE CLOUD

By Leah Yamshon

If you're a regular user of iCloud Drive, Apple's Dropbox-like storage solution for managing file syncing between your Mac and iOS devices, then your life is about to get a little bit easier. Apple has designed a standalone iCloud Drive app and bundled it within iOS 9, placing all of your iCloud Drive files in one easy to access spot.

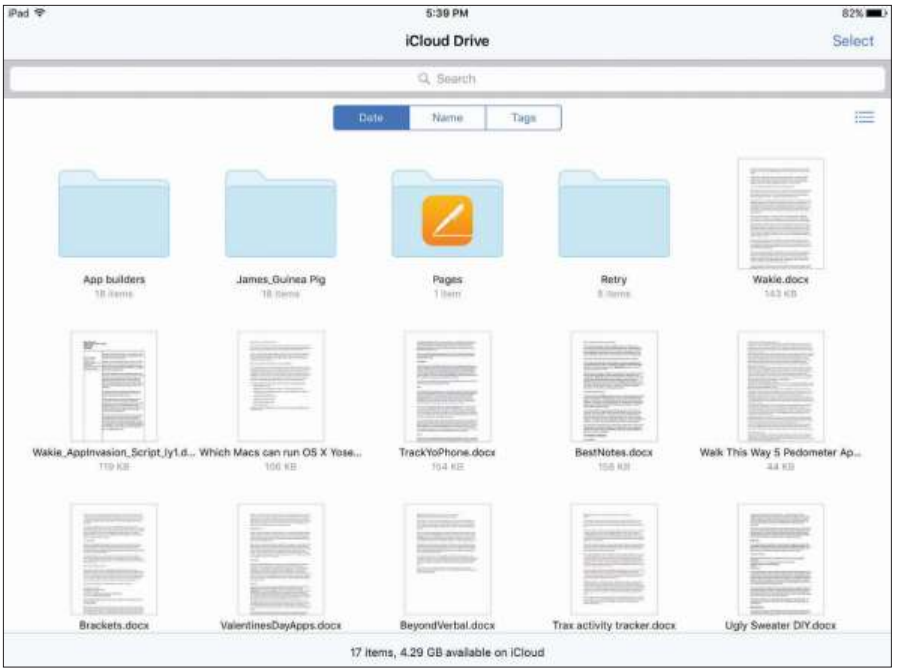
But, surprisingly, the iCloud Drive app doesn't automatically appear on your iOS device's home screen – it's instead tucked away within Settings, and you'll have to tell your iOS device that you want to see it. Besides that, it's a pretty straightforward app. I spent some time with it while checking out the iOS 9 public beta, and here are some quick tips on getting started.

Turn it on

I appreciate that Apple hasn't added yet another app to its preinstalled, cannot-erase repertoire (I'm looking at you, Stocks, Compass and iBooks). Instead, iOS 9's iCloud Drive app is opt-in, and you can enable/disable the app at will. Just go to *Settings* ➔ *iCloud* ➔ *iCloud Drive*, and toggle on the switch next to Show on Home Screen. That will make the app's icon appear, instead of keeping it hidden away.

Syncing documents

You've always had access to your iCloud Drive files on iOS, but they could only be pulled up via compatible apps. For example, if I wanted to continue editing a .docx or .txt file, I would first have to launch Pages on my iPhone or iPad, and then open the document saved in iCloud Drive.



With iOS 9, once you've enabled the app, you'll find all of your iCloud Drive documents neatly organised within. It's pretty barebones, somewhat mimicking the folder and file experience you would get on your Mac. Tap on any file to view it. From there, you can move that file to a different iCloud Drive folder, trash it, or share it.

Editing is a different story. You'll have to export the file to a different app if you'd like to make any changes. Tap the Share button in the top-right corner, and then select the app you'd like to export the file to. You'll be redirected to that app, where you can edit and change the file at will.

Depending on the file type, some of your formatting preferences, such as font, might be different, and the app might create a separate file that's better suited for editing. iCloud Drive also creates folders for each of the apps you've used to manage documents – so you'll documents you've worked on in Pages in the Pages folder, for example, and Byword files in the Byword folder. Even with these quirks, every change you make will sync back to iCloud, and you can pick up where you left off on any device synced with your iCloud account.

iCloud Drive is a no-frills app, but it gets the job done.

Though the app might not look like much, organising your files in a centralized iCloud Drive app makes them much easier to access, and might even make iCloud Drive a handier resource for your workflow.

The iOS 9 public beta is available now, and the fully-baked version is set to launch later in the autumn.

Apple Music and the iPod

HOW APPLE MUSIC COULD LAUNCH THE iPOD'S COMEBACK

By Michael Simon

The iPod was Apple's original rock star. Back before the iPhone became a global sensation and the iPad led the post-PC revolution, the iPod was the device generating long lines and record-breaking sales. Apple's annual music event – where the latest in iPod technology was unveiled to much fanfare – created enough buzz to sustain sales for the next 12 months, and its popularity was such that it created a so-called halo effect that spurred sales of Apple's other products, namely iMacs and iBooks.

Even when its would-be assassin was announced at Macworld San Francisco, Steve Jobs stressed the "widescreen iPod with touch controls" aspect as one of its three tent pole features. In fact, it was the very first thing we learned the iPhone could do, and Steve waited a full 12 seconds until the applause died down and he could tell us the new device was also a phone. And even then, most people just wanted the touchscreen iPod, which Apple delivered a few months later.

But while the iTunes Music Store was specifically targeted at iPod users, it was the App Store that pushed the iPod out of the limelight. By the third-generation of the iPhone, the iOS iPod icon had been supplanted by a more generic Music one, and the annual iPod refresh became an appetiser to the iPhone entrée. Until recently, the iPod hadn't seen a significant update since 2012, and in June lost its tab at the top of Apple's website too, fittingly to Music.

But while it may have seemed that Apple had all but forgotten the iPod, the launch of its streaming music service might have the company singing a different tune. Apple Music is tailor-made for the iPod touch, and it just might be the thing that, coupled with the recent updates breathes new life into its range of personal MP3 players.

Are you experienced?

Had Apple the foresight and influence to release a streaming service alongside the iTunes Store in 2003, it would have sold more iPods than it could make. The freedom, versatility and exploration built into Apple Music is made to follow you wherever you go. From Beats 1 to the hand-curated playlists and myriad offline listening selections, Apple has put tremendous thought into how music lovers want to listen. The iPhone is a large part of it, of course, but your library will travel to all of your devices, whether that's a MacBook, PC, Apple Watch, Apple TV, iPod, or eventually even a Samsung Galaxy S6.

It's about the experience. The very first commercial for the iPod showed a young

adult listening to music on his Mac, transferring it to his iPod and picking up the same song as he danced out of the door. At the time it was a novel concept, but in today's world, having tens of millions of songs at our fingertips isn't exactly revolutionary. Still, what elevates Apple Music is the package, much like the iPod was all those years ago.

Apple has always used its services as a way to lock in customers to its ecosystem – once you have two devices operating in concert with iCloud, the odds of switching drop substantially – but Apple Music is different. Not only does it mark the first and only foray into the world of Android, it's put a focus back on music as a tenet of Apple's ecosystem. And with music, comes the iPod.

Enthusiastic welcome

It was no coincidence that some sleuths found new iPod images hidden in the latest version of iTunes. But while the new set of colours – gold, darker blue and darker pink variants for each of the models – might give sales at least a small shot in the arm, Apple Music presents an opportunity to truly give the iPod a reboot. If the enthusiasm that greeted the new iPods is any indication, Apple has hit a high note with music fans, combining its trademark design with unique features, such as hand-curated playlists and a global radio station, to deliver an entertainment system that towers above its competitors.

But pairing it with the new iPods would open up Apple's new streaming service to a whole new demographic. No matter how many iPhones Apple sells each quarter, there are still large swathes of the population who don't purchase them. And while Apple would have a hard time directly targeting all of them, there is one group that it can reach: children. Or, more specifically, their parents.

Unfortunately, though, only the iPod touch will work with Apple Music because it requires a Wi-Fi connection.

Play it again

Based on most surveys, iPhone usage doesn't generally start until the teen years, but if someone were to track iPod sales, I suspect they skew to tweens and school-aged children. You could argue that Apple Music's most enticing feature is the £14.99 family plan, which allows up to six people to use the same account. And since Family Sharing has opened up iTunes accounts for those under 13 (with restrictions, of course), the whole household can enjoy Apple Music for a very affordable price. Apple hasn't marketed the iPod as a fun, cool device since the days of the silhouette ads, but it might be able to pump up sales with a new campaign that positions the iPod as the ultimate Apple Music player.

The iPod line-up is very clearly delineated by features, and Apple doesn't need to shake things that much to make each model more attractive. Prior to the update, the touch was the only model Apple sold that was powered by the lagging A5 chip (it now features the M8 and A8 chip), although it wouldn't hurt to add LTE either, giving it true parity with the iPhone.

The iPod nano and shuffle have always been music-centric, but a tight tie-in with Apple Music could have brought them back to their get-up-and-go roots. Unfortunately not, though. If only Apple could fit the nano with a 4G chip strictly for music streaming (much like Amazon does with its Kindle e-readers), it could be an always-on gadget that puts not thousands of songs in your pocket, but tens of millions.

We got the Beats

While the streaming service was clearly the main motivation behind Apple's purchase of Beats Electronics, there's a whole other aspect to the company, too. And while the Solo and Studio headphones are the source of much ire among audiophiles, they consistently rank among the top-selling models for both iPhone and Android users.

So while I don't think we'll be seeing an Apple logo replacing the trademark 'b' on the ear cups anytime soon, I could see Apple making a special Beats+iPod model that integrates an iPod shuffle into the body of the headphones. With built-in Wi-Fi and Bluetooth, Apple could eliminate the need to carry any other devices on your run, seamlessly syncing your latest playlists without even needing to fumble with dragging and dropping from iTunes.

It could be a major selling point once the Android app lands. Without the benefits of Siri and the iOS ecosystem behind it, the Android version of Apple Music won't add much more than Spotify or Rdio do already. And when you factor in the staunch anti-Apple sentiment some have, breaking through won't exactly be easy. Apple Music may be one of the best streaming services around, but it's still hard to see many Android users switching to iPhone because of it.

The backing of Beats could, however, help in that regard. Apple Music may be built on the foundation of Beats Music, but aside from the radio station, there isn't anything within the app that ties it to Dr. Dre's brand. A special-edition version of the headphones that integrate directly with Apple Music would go a long way toward soothing some of the hard feelings Samsung and Motorola users have toward the iPhone and Apple.

Evolution

Music has always been integral to Apple's mission. A large part of why the iPod was such a spectacular success was that it was a labour of love. Steve Jobs wanted an elegant, modern way to travel with his digital music collection, and his vision helped craft an original, unique device that can be traced to nearly every product we hold dear today.

Apple Music might not be as revolutionary, but it marks a conscious return to the company's focus on music. People will argue that Apple is playing catch-up with its streaming service – and perhaps it is – but using Apple Music doesn't feel like a me-too product. From Beats 1 to the carefully crafted playlists and aggressive family pricing, it's clear that Apple has taken pride and care in developing Apple Music, and going forward, it looks to become a major component of its ever-expanding ecosystem.

And it would be fun if Apple took the iPod for one last ride on the tour bus.

Guide to iOS settings

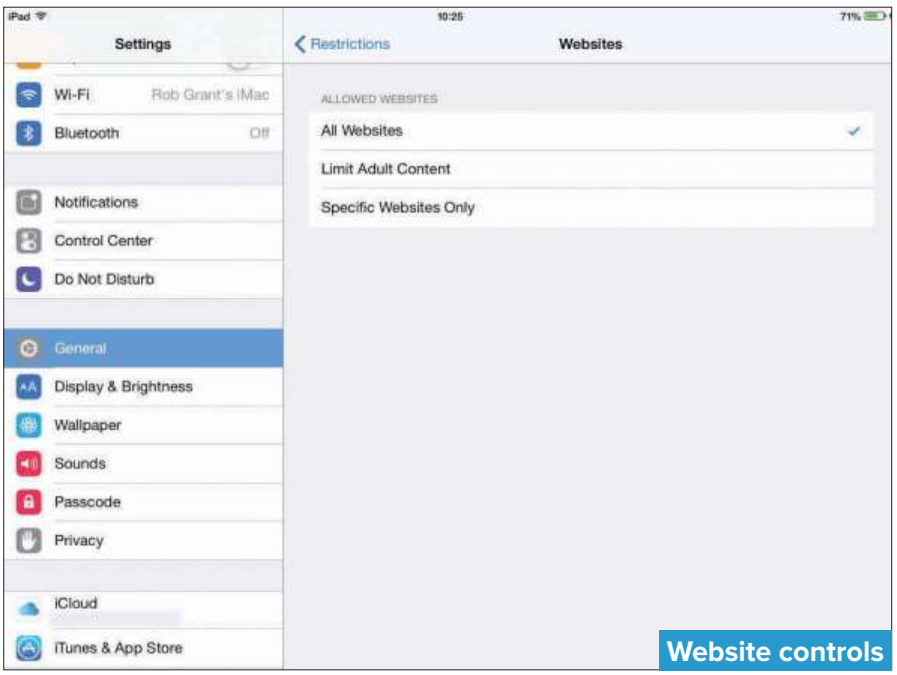
IN THE SECOND PART OF OUR GUIDE TO iOS SETTINGS, WE LOOK AT YOUR PRIVACY OPTIONS, LOCATION SERVICES AND GUIDED ACCESS

By Cliff Joseph

Website controls

In the previous issue, we looked at the Restrictions section of the Settings menu, and how to control in-app purchases and limit what Siri can access. Here we'll start the second part of our guide to iOS settings by continuing to look at Allowed Content and the website option, which allows you to limit the websites that can be viewed in Safari. By default, this is set to allow 'all websites', but tapping on Limit Adult Content will automatically filter out most adult websites. You can, however, still allow or block access to specific websites by entering the address in the 'always allow' or 'never allow' panels.

The second option, labelled Specific Websites Only, is the safest bet for young children as it blocks all websites apart from a few child-friendly sites that have been approved by Apple – such as Disney and Apple's own website. If you need to override these restrictions at any time you can still type a web address into Safari and then tell it to allow that website by entering your password.



Website controls

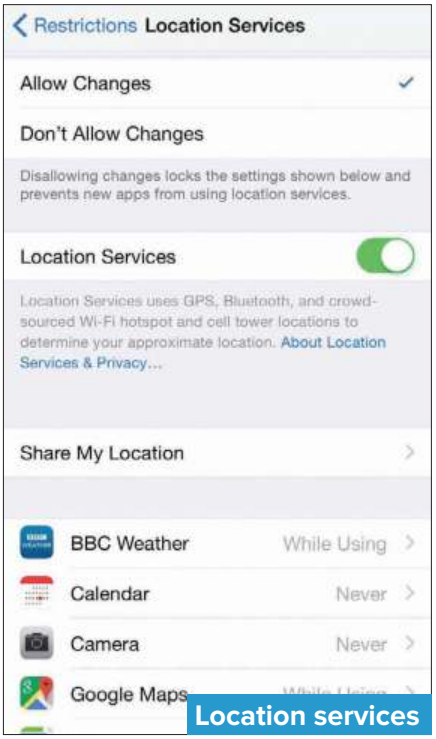
Purchasing

Last month, we looked at the various options that allow you to restrict in-app purchases or to completely block all types of purchases. Rather oddly, there's another option that Apple adds in here.

The Require Password option determines whether you need to use a password when making purchases on your iOS device. If you select 'Immediately', then you'll need to enter your password for every single purchase or download. The 15 minutes option gives you a slight breathing space, so you can enter your password for one purchase, and then buy additional apps, music or video for the next quarter of an hour without having to enter your password again. There's a safeguard here, though, as you or your children will still need to enter the password in order to make any in-app purchases even within 15 minutes of initially buying an app.

Privacy settings and Location Services

The next important section within Restrictions is the Privacy controls. There's a long list of options here, which might look a bit daunting, but most of



these options work in the same way, so we don't need to overload you with too much information all at once.

At the top of the Privacy list is Location Services, which uses a combination of GPS, Wi-Fi and Bluetooth options to determine your location. If you're worried about your movements being tracked, then you can switch off Location Services. The only exception here is that – in an emergency – using Find My iPhone will reactivate location services so that you can actually find your lost iPhone or iPad.

Sharing your location

Right below the main On/Off button for Location Services is a feature labelled Share My Location. This gives you two options for telling people your location when you contact them using Messages or Find My Friends. If you select 'Send My Current Location' when sending a message you will just send a one-off message telling them your location at that precise minute. Alternatively, Share My Location will allow the message recipient to follow your movements for just one hour, until the end of the day, or to keep following you indefinitely. That's obviously handy if you want to keep an eye on your children, or you're waiting for friends or family to arrive somewhere.

Let apps use your location

It's good that you can turn of location services if you want to, but apps such as Maps or Weather need to know your location in order to work properly, so you also have the ability to control location services for each app individually. Any app that tries to use your location info is listed in the Location Services panel, and if you tap on the name of an app, you'll see two options – 'Never' blocks the app from using location services at all; 'While Using the App' allows the app to check your location when you have it running on screen. I chose the BBC Weather app for this example, but the privacy controls are the same for all the other apps that may want to use location services.

Making changes to settings

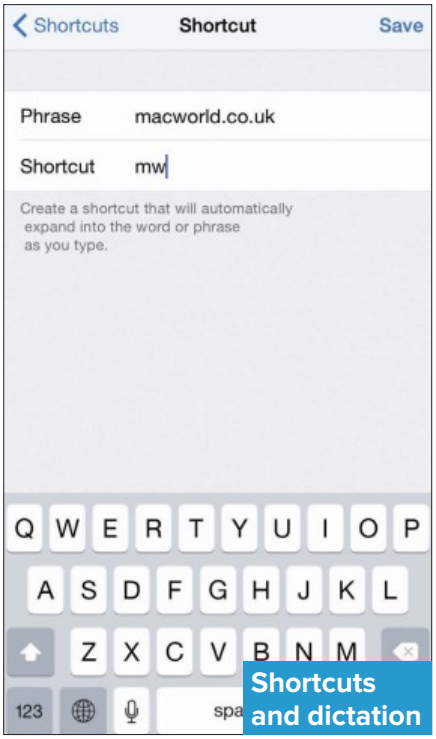
One handy option is the entry marked 'Don't Allow Changes'. You can set up location services for your main apps – for me it's the BBC Weather and Maps – and then tap 'Don't Allow Changes'. This locks the settings for those apps so they work the way you want, but automatically blocks any new apps you might download from having access to location services. If you change your mind, tap 'Allow Changes' to change the location settings for all your apps once more.

Keyboard control

One of the big changes introduced in iOS 8 was the ability to use third-party keyboards, as well as the standard onscreen keyboard that is built into iOS 8. When you download a new keyboard from the iTunes Store, it will appear on the Home screen of your iOS device just like any other app. However, you also need to go into Settings in order to activate each keyboard you want to use.

Go into Keyboard settings and then tap Keyboards at the top of the screen. You'll see the standard iOS English keyboard listed, along with the Emoji keyboard that displays smiley faces and other symbols. Beneath those is the option to 'Add New Keyboard'. Tap on this and you'll see whatever keyboard apps you have installed. We've downloaded two new keyboards – Fleksy and Swype – that we want to try out.

Tap the name of the keyboard and you'll be asked if you want to give the keyboard 'full access'. Some people worry about this, as it means that the keyboard app could record everything you type and send it off to the developer of the app. But any app that did this wouldn't sell very well, so developers generally don't abuse the access that you grant them.



Shortcuts and dictation

Shortcuts give you a quick way to type out common words or phrases. One shortcut is already built into iOS 8 to help you get started – it lets you type 'omw' and then expands that into 'on my way'. You can add other shortcuts of your own for things like email or web addresses, so we'll add 'mw' as a shortcut that will allow us to automatically type out macworld.co.uk whenever we need to.

The keyboard settings in iOS 8 also include an option that allows you to activate speech-to-text dictation on your keyboard (which used to be part of Siri). Turning this on displays a microphone icon on the keyboard, so you can talk instead of typing. Just remember that dictation requires an internet connection while you're using it, and that it works only with the standard iOS 8 keyboard so we can't use it with the third-party keyboards we installed just now.

There are a few other options in the Keyboard settings as well, but these are mostly straightforward On/Off controls for things like the automatic spelling-checker and the Caps Lock button.

Wi-Fi sync options

When iTunes was first launched more than a decade ago, the idea was that you would buy music and video using iTunes on your Mac, and then download your purchases onto an iPod using a USB cable connection. Nowadays, though, many of us do everything on our iPhones and iPads, including buying apps, music and videos, and we often forget to backup our purchases on to our Macs.

But, just below the Keyboard settings there's an option called iTunes Wi-Fi Sync. Ironically, you still have to use a USB cable to connect your iOS device to your Mac and select the Wi-Fi Sync option within iTunes on your Mac in order to activate it on your iOS device. However, you need only do this the first time, and after that you can sync all your purchases back to your Mac via Wi-Fi. However, Wi-Fi Sync works only if your iOS device is being charged at the time, is on the same Wi-Fi network as your Mac, and you have iTunes open on your Mac.

VPN

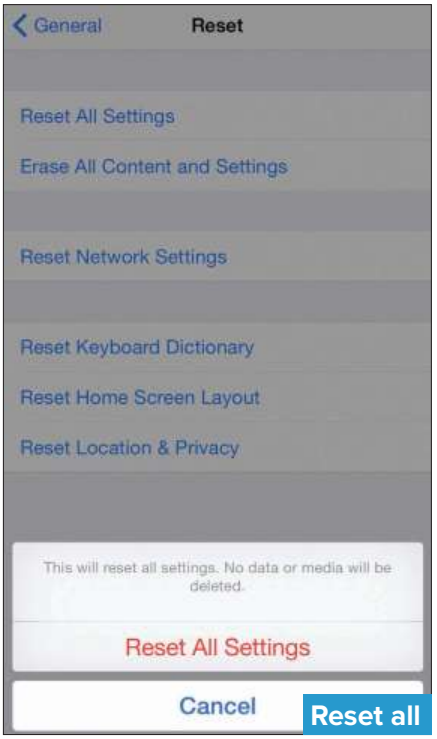
VPN – virtual private network – is an important networking tool that can be useful for both big business organisations and ordinary home users. Business users will often set up a VPN for their staff as it helps to keep email and other information more secure when you're away from the office and you have to use Wi-Fi hotspots or other public networks.

Your IT manager can show you how to configure the VPN features that are built into iOS, but it's also possible to download a number of VPN apps from the App Store. Business users will probably avoid these third-party apps and set up VPN themselves, but these apps can also be used for distinctly non-businessy tasks, such as gaining access to the US version of Netflix.

Reset All

The final option in the General settings panel is one that you will probably never use – until you decide to pass on your iPhone or iPad to a friend or sell it.

The Reset command provides a number of different options. The first is 'reset all settings', which leaves all your apps, music and other content alone, and just resets personal preferences,

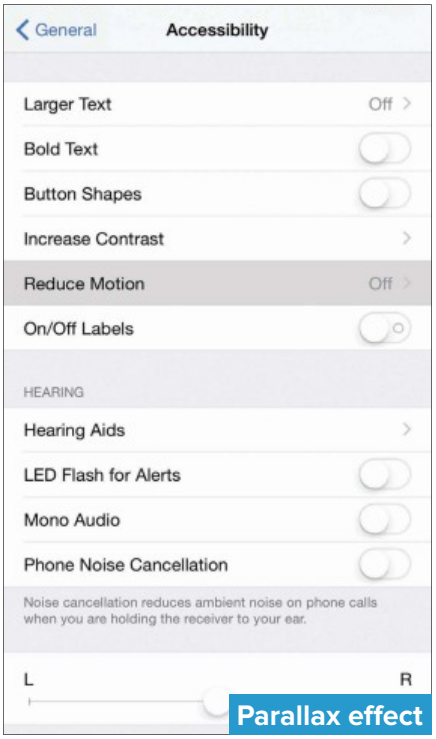


such as new keyboards or VPN settings that you might have added. We've heard that this particular option can be a little buggy, though, so it's worth backing up your iPhone or iPad on to your Mac before resetting it.

The next option is to 'erase all content and settings'. This is the nuclear option that gets rid of all your personal preferences and settings, along with all apps, music, videos and photos. This is the option that you'd use if you were selling your iPhone or iPad and you wanted to remove all your personal information first.

There are some other options in here as well, although they're a lot less drastic than a complete reset. The network reset tells your iOS device to forget details such as Wi-Fi passwords. One reset option that might be worth using occasionally is the Location And Privacy option. This resets the location and privacy settings for all your apps, which means that any app that tries to access your location, contacts or other information will have to ask permission all over again.

If you want to erase the contents of your iPhone because it's not working properly, you can use the settings to do so and then restore it from a backup.



Parallax effect

Turn off Parallax effect

It's taken us a while to cover the long list of options that are crammed together in the General settings panel on iOS devices, but there's one complete group of settings that we won't include here. Like Macs, iOS devices include a number of Accessibility features that are designed to help people who have problems with vision, hearing or motor skills.

However, there are a few options that it's worth mentioning here as they can be useful for many people regardless of whether or not they have visual or other problems. For instance, the infamous 'parallax' effect on the Home screen that makes a lot of people feel sea-sick can be turned off by selecting the 'Reduce Motion' option within the Accessibility settings panel.

Guided Access

Another useful feature is the Guided Access option. When you activate this, you can lock down your iOS device, so that it runs only one specific app. This can be useful for teachers who only want their students to have access to a particular app during a lesson. You can also block specific features within that app, which is useful for parents who might want to be extra sure that they've blocked in-app purchases, or online features they might feel are unsuitable for young children.

Start by turning on Guided Access in the Accessibility settings, and then launching the app you want to run. Quickly press the Home button three times, and you'll see the Accessibility menu, which allows you to activate either the on-screen Zoom function or Guided Access. Select Guided Access and you will be prompted to use your finger to draw around the buttons or other parts of the screen that you want to block. We'll launch iBooks and then block the features – greyed out at the bottom of the screen – that would allow someone to gain access to the iBookstore and start spending money.

Guided Access provides a number of other useful options too, such as the ability to limit the time a child can spend playing a game. And the only way to turn off Guided Access and leave iBooks so that you can use other apps is by entering your passcode.

Brightness

Moving on from General Settings, the next option that we come across is the Display And Brightness option. This is straightforward, as it provides a simple slider control for adjusting the brightness of your screen. However, the Auto-Brightness option can be a little bit unpredictable, so there's a couple of things that are worth mentioning here.

As the name implies, Auto-Brightness uses the light sensor in your iPhone or iPad to check the ambient light levels around you, and then automatically attempts to adjust the screen brightness for you. The aim is to maintain visibility, whilst also lowering the brightness wherever possible in order to preserve battery power. It doesn't always work though, and some people simply prefer to turn off Auto-Brightness altogether. However, you can modify the way Auto-Brightness works by leaving it turned on and then using the slider control to increase or decrease the brightness. The Auto-Brightness setting will then note that you prefer the brightness to be higher or lower and will use your settings rather than its automatic default setting.

Guided access

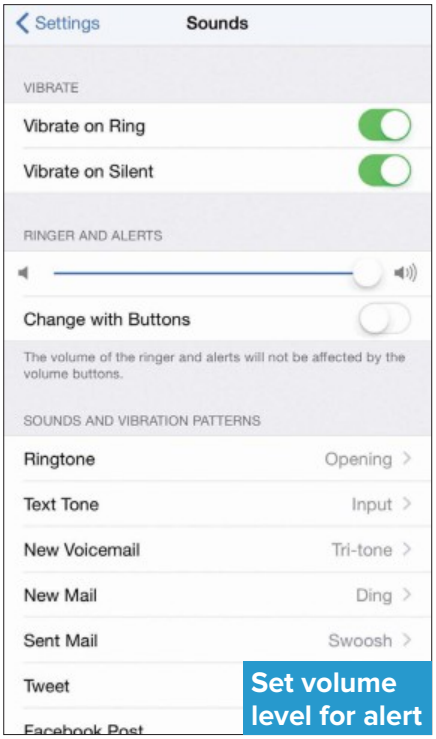
Zooming in on the display

The Display And Brightness Settings also include a number of controls for enhancing screen visibility, which are separate from the more specialised tools found in the Accessibility settings. The Display Zoom allows you to choose Standard and Zoomed views of screen elements such as icons and buttons, while the text controls can be used to increase the standard size of text and to add a bold effect to the text as well.

However, these text controls work only with apps that have been written to specifically support the 'Dynamic Type' feature that is part of iOS itself. As you'd expect, Apple's own apps support Dynamic Type, so you'll see larger text in Mail, Notes and the other apps that are built into iOS. Unfortunately, many apps don't work with Dynamic Type, which is why Apple includes additional Zoom and magnification features within the Accessibility settings.

Wallpaper

The Wallpaper settings panel is simple enough, just allowing you to change the wallpaper displayed on the background of your Home screen. You can use Apple's ready-made wallpapers, or import your own photos from your Camera Roll



or photostreams, but there are no hidden surprises in there.

Set volume level for alert

The Sounds settings are simple, as they mostly let you choose which sounds play whenever your iOS device receives calls, emails and other messages that need your attention. But there is one useful option in here that people sometimes miss. It used to annoy me that turning down the volume on my iPhone would sometimes cause me to miss messages because I couldn't hear the alert sound properly. Then I realised you can set the volume level for alert sounds separately from the volume level for playing music or listening to video in other apps.

The Ringer And Alerts setting provides a simple slider control, so that you can set the volume level for alert sounds. There's also an option called Change With Buttons. This option is turned on by default and it means that the volume level for alert sounds gets turned up and down along with the volume for everything else when you use the volume buttons on the edge of your iPhone or iPad. But if you turn this option off the volume for alerts remains fixed at the level that you set with the slider, regardless of the volume level used by other apps.

Use Touch ID to authorise purchases

The settings for Touch ID and Passcode are straightforward – which in itself is remarkable when you think about the complex technology that's being used here. However, there are a few options that are worth looking at in more detail.

As you're probably aware, Touch ID uses your fingerprint(s) as an alternative to your normal passcode when unlocking your iPhone. But that doesn't mean you can forget about your passcode altogether – apart from anything else you'll need it every time you want to enter the Touch ID settings panel.

Once you've got into these settings you can also tell your iPhone to use Touch ID to authorise your purchases on iTunes or the App Store, which is a handy timesaver if you've got a strong-but-complicated password for your account.

Set up Touch ID

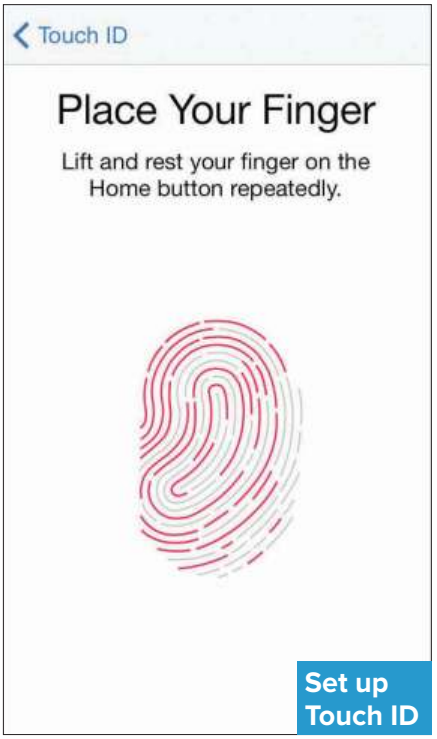
If your iPhone has Touch ID, then it will prompt you to scan your finger when you set the phone up for the first time. Don't forget, though, that you can add multiple fingerprints whenever you want. This is a good idea, as I've found I prefer to use different fingers at different times. I use the thumb on my right hand when holding the iPhone, but I use a different finger when I've got the iPhone sitting on a desk in front of me.

You can scan up to five fingers, which should be enough for most people, and you can also delete fingers as well. We've seen workarounds on the web that allow you to scan more than five fingers, but we wouldn't recommend doing so as it could muck up your iPhone's security settings.

Changing the passcode

Once you've set up Touch ID it is possible to turn off your passcode altogether, but remember that the passcode isn't used just to unlock your iPhone. It also restricts access to many important settings on your iPhone, as well as passwords and even credit card details that you might have stored in Safari and other apps.

There's an option here to change your passcode if you want, and you can also



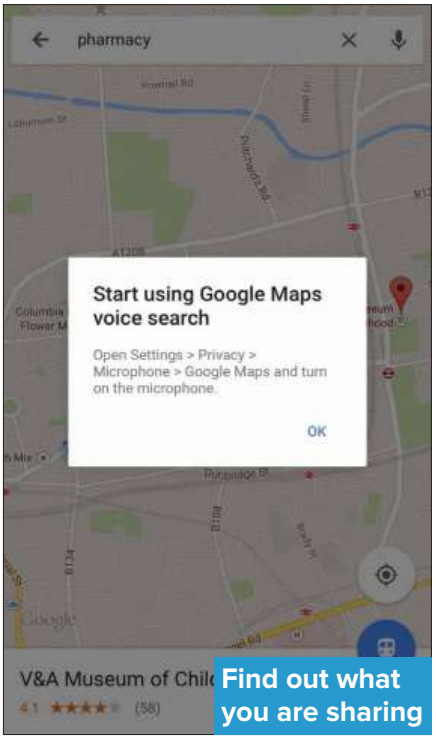
turn off the 'simple' four-digit passcode and use a longer passcode that can contain numbers, letters and symbols too. And, if you scroll right down to the bottom of this panel, you'll find the 'Erase Data' option – the ultimate security option that deletes all data on the iPhone after 10 failed attempts at guessing the password.

One other thing to remember is that, even with Touch ID activated, you'll still be asked to enter your passcode each time you restart your iPhone after being completely turned off, or if you haven't used your iPhone for 48 hours.

Decide what appears on the lock screen

This settings panel also includes a few options that aren't directly related to either Touch ID or your passcode, but which affect how the Lock screen works when your phone is still locked.

You can turn the Today and Notifications views on or off in order to prevent anyone from seeing recent messages that you might have received, and you can turn Siri off here, too. The Passbook option can be turned off as well, which ensures that no-one else can use Passbook to spend your money or use your airline tickets (unless they've got your passcode or one of your fingers....).



Privacy settings

The next section in iOS Settings is Privacy. This is a key set of features, but we've looked at some of these settings before, as the Privacy panel duplicates several of the settings that can be found in the Restrictions panel within General Settings. We covered the Location Services options when we looked at Restrictions earlier, so we don't need to repeat that information here.

However, your apps can share more than just location data. Those built into iOS – including the Contacts, Calendar, Photos and Health, can share extensive personal data with other third-party apps that you install on your devices. Any app that wants access to your data – such as Google Maps asking for address info from Contacts – should ask your permission when you first install the app. However, keeping track of all the different apps that you install can get tricky after a while, so the Privacy settings shown here allow you to get a quick overview of all the info that you might be sharing.

Find out what you are sharing, and with whom

The iOS apps that can share your personal info are all listed in Privacy, and if you tap on the name of each app you can see which other third-party apps have asked for permission to share your data.

Some of these might surprise you, too – it might make sense for Google Maps to ask for address info from Contacts, but you probably didn't realise that Google Maps has a 'voice search' option that can control your microphone, too. That's a legitimate use for the microphone and, of course a wonderful company like Google wouldn't dream of infringing anyone's personal privacy. But in the hands of someone less scrupulous your microphone could be turned into a bugging device that listens to every word you say. So it's worth checking these Privacy settings every now and then, and turning off any sharing options that don't seem to be absolutely essential.

Let apps share data

It's also worth remembering that the ability to share data between apps is a two-way street. Apple's Health app, for instance, allows third-party health apps to both 'read' and 'write' data. I've got the Nike Running app on my iPhone and this can 'write' my workout and running data to Health, so that Health can compile a better overall picture of my physical condition. However, the Nike app can also 'read' other data, such as my heart rate, from Health and let me know when I'm overdoing things a bit.

Cloud options

It may sit a long way down the list of options in the iOS Settings panel, but iCloud is one of the key technologies that sits right at the heart of both iOS and OS X. When it was launched back in 2011, iCloud was just designed for syncing emails and photos between your iPhone and your Mac. However, it has matured into a sophisticated cloud storage system that can share all sorts of personal information across multiple devices.

One of the most important new features that was added to iCloud in iOS 8 is Family Sharing. This allows one person – known as the 'organiser' – to create a special 'family group', and to then invite up to five family members to join that group. Family Sharing works on devices running iOS 8, Yosemite on Macs, and even on PCs running Windows (though you'll need to download the iCloud for Windows software from Apple's website).

The only restriction is that the organiser has to be an adult, with a credit card linked to their Apple ID account. The organiser agrees to pay for any purchases made by members of the family group, and any purchases made by any member of the group are automatically made available to everyone else in the group. But don't worry – there are options within Family Sharing that can prevent your family going crazy with your credit card.

Adding family and approving purchases

Once you've created a family group, you can then send invitations to the other family members that you want to include in the group. This requires that each family member has their own Apple ID account. In the past, children under the age of 13 weren't allowed to create Apple IDs on their own, but iOS 8 introduced a new system that allows parents to create and control special Apple ID accounts for younger children. There is also a separate option for creating Apple ID accounts for students and older children.

These accounts for children also include an option called Ask To Buy that gives parents the ability to approve or block the purchases that their children make. When the child tries to make a purchase they will see a message on the screen of their iOS device telling them that their parent will be informed of the purchase, and asking them if they want to change their mind before going ahead. If they do go ahead with the purchase, then another message will be sent to the parent/organiser giving them the option of allowing or blocking the purchase. The Ask To Buy feature is automatically turned on for all children under the age of 13, but you can leave it turned off for older children and other adults in the group.

Next month: We'll continue looking at cloud storage and reveal the different family sharing options. Download the Newsstand version of the magazine from tinyurl.com/pevjevb.

Curb your data usage

HOW TO PUT A LID ON YOUR iPHONE'S DATA USE

By Ben Patterson

While four (or six, eight, or more) gigabytes of cellular data probably sounded like a lot when you first signed up for your iPhone data plan, thanks to the latest data-hungry iOS apps and features, a gigabyte of mobile data isn't what it used to be. Indeed, you'd be amazed how quickly your iPhone (or your LTE-enabled iPad, for that matter) can use up mobile data – particularly if you're watching HD-quality Netflix videos, streaming iTunes Match songs, using your iPhone's personal hotspot with your laptop, or letting iOS update your apps automatically.

Stop automatic downloads

With the right settings enabled, iOS will automatically download any new music, apps, or iBooks purchased by any of your iCloud-connected devices. Even better, your iPhone can automatically download and install updates for all your iOS apps. While convenient, automatic downloads can put a serious dent in your monthly data allowance, especially if you have a lot of iOS apps installed.

Luckily, you can flip a switch to block cellular access to automatic downloads, and doing so also turns off the spigot for two other data-hogging features: iTunes Radio and iTunes Match. Just tap *Settings* ➔ *iTunes & App Store*, then turn off the Use Cellular Data switch. The only downside is that you can't pick and choose which automatic download features can use cellular data; instead, it's an all-or-nothing deal. In other words, if you don't let your iPhone download app updates over cellular, you won't be able to stream iTunes Match tracks on your mobile network, either.

FaceTime calls

FaceTime makes for a great way to keep in touch with far-flung family and friends, as well as a surprisingly easy way to drain

your monthly cellular data allowance. You've got a couple of options when it comes to limiting FaceTime's cellular use: either exercise a little self-discipline when it comes to non-Wi-Fi video calls, or shut off FaceTime's cellular access completely.

If you picked option two, go to *Settings* ➔ *Cellular*. Scroll down to the FaceTime setting (under the Use Cellular Data For heading) and flick the Off switch.

Bonus tip: You can turn off cellular access for any of your apps, not just FaceTime, in the Cellular settings screen.

Netflix and YouTube

Whether you're stuck on a train or cooling your heels in a hotel room, watching a movie on Netflix over your iPhone's speedy LTE connection can be a tempting diversion. But think twice before binge-watching an entire season of *House of Cards* over LTE. Netflix (or another video-streaming service, for that matter) can easily chomp a gig or more of data an hour for HD-quality video. Indeed, a couple of HD Netflix movies could blow through an entire month's allowance.

So take it easy when it comes to streaming Netflix, YouTube, or other videos. Remember, even just a few minutes each day can add up.

If you can't live without Netflix while you're on the road, try dialling down your Netflix video quality to save bandwidth. Open your Netflix account in a desktop browser, visit the Your Account screen, click the Playback Settings screen, and then pick an option: Low (think sub-DVD quality, but only a third of a gigabyte of data use per hour), Medium (0.7GB an hour for SD-quality video), or High (3GB an hour or more for HD-plus quality).

Facebook videos

A recent update of Facebook's iOS app added an eye-popping new feature: autoplay videos, which start playing automatically as you scroll through your news feed.

It's a nifty feature, and the default Smart Auto-Play setting supposedly adjusts your autoplay video quality depending on your battery life and whether you're on a cellular network. Still, all those videos can add up when it comes to cellular data. If you'd rather turn off this feature, try this. Open the Facebook app on your iPhone, tap the More button in the bottom-right corner of the screen, scroll down and tap Account Settings, then tap Videos, Auto-play. Flick off the Smart Auto-Play switch, then pick a new setting – ideally, either Use Wi-Fi Only or Never Play Videos Automatically.

Mobile-friendly browser

A little casual web browsing over your iPhone's LTE connection probably won't drain your monthly data allowance on its own. Again, though, it all adds up. That's why frugal iPhone users would be well served with a bandwidth-conscious mobile browser – specifically, one that 'crunches' web pages into smaller chunks that consume less cellular data.

Your options include: Opera Mini (tinyurl.com/pj6j7pc), a free browser that shaves hefty chunks of data from web pages, and Google Chrome (tinyurl.com/q6bsm9c), which crunches web pages with its Google-hosted Data Saver feature (tap the menu button in the top corner of the screen, then tap *Settings* ➔ *Bandwidth* ➔ *Data Saver*).

Podcasts

Not that long ago, my wife and I had a brief but annoying internet outage at our house, meaning that we had to rough it with LTE for a few days. Oh well, I thought; we're adults, and we can live without Netflix for 48 hours, right?

So imagine my surprise when a rare text alert from my carrier landed on my phone a day or so later: somehow, we'd used more than 90 percent of our cellular data for the month. What happened?

It turns out the podcast apps on our iPhones hadn't got the memo about being careful with bandwidth, and they dutifully downloaded a fistful of new podcasts – yes, including several lengthy video episodes.

The moral of the story is simple. Make sure that your podcast manager of choice only downloads new podcasts over Wi-Fi, not cellular.

For the iOS Podcasts app, go to *Settings* ➔ *Podcasts*, then turn on the Only Download On Wi-Fi setting.

If you can't see a similar setting for your favourite podcast app, you can always block its cellular access. Tap *Settings* ➔ *Cellular* and find your podcast app in the big list of apps. Turn off its cellular switch.

Personal Hotspot

Turning your iPhone into a portable hotspot makes for a great way to keep your laptop connected while you're on the go. Unfortunately, it's also a recipe for a jumbo-size wireless bill.

Unless you tell your computer otherwise, it'll assume that it's using a no-limit internet connection, leaving it free to download massive system and app updates, grab file attachments from your email provider, sync your Dropbox and Google Drive folders, and perform any number of data-hogging activities.

The good news is that newer iMacs and MacBooks will automatically cool it when it comes to giant system updates over your iPhone's mobile hotspot. Similarly, if you're using Windows 8 or later, you can designate your Personal Hotspot as a 'metered connection'; open the Settings panel on the right side of the screen, click the Network icon, right-click the name of your mobile hotspot, and select Set As Metered Connection.

That said, even the 'metered connection' flag won't stop your laptop from syncing, say, those massive video files in your Dropbox, or pinging Outlook for new messages and attachments every five minutes.

Make sure to pause any file-syncing apps on your desktop before you connect using your iOS Personal Hotspot, and consider using a web client for checking email. Users of iTunes on the desktop should look out for automatic podcast, music, and video downloads. And yes – previous warnings about Netflix, YouTube, and other video-streaming services still apply.

You can use the Activity Monitor app on your Mac to keep an eye on your data usage – just make sure the Network tab is selected. On a Windows 8 or higher PC, you can check your bandwidth by right-clicking your data connection and selecting Show Estimated Data Usage.

Make your own app

THESE THREE MAKE-YOUR-OWN-APP SERVICES WILL HELP YOUR BUSINESS GO MOBILE IN NO TIME

By Sarah Jacobsson Purewal

Small business owners. Have you ever considered going mobile? That is, making an app for your business, whether it's a restaurant, store, or events company? It's not a bad idea. After all, you know your customers are on their phones 24/7, so you might as well capitalize on that.

The good news is that doing so isn't nearly as difficult or as expensive as you might think. In fact, you don't even need to hire an outside developer to create an app for your business. There are plenty of DIY app-building services on the market, which offer intuitive app-creation tools and app hosting for a low monthly fee.

We tried out several DIY services and found that Appy Pie, Como, and GoodBarber are all especially user-friendly for people who have never built so much as a website (let alone an app). Here's how they work.

Your first step with Appy Pie is to choose the app's category and give it a name.

Appy Pie

Appy Pie (appypie.com) prides itself on being simple and easy to use – hence its tagline: "Make an app, as easy as pie." This code-free drag-and-drop app builder is easy to navigate (and supported with helpful pop-ups, video tutorials, and a live chat box), and even a complete tech newbie will be able to create a professional-looking app in a few hours.

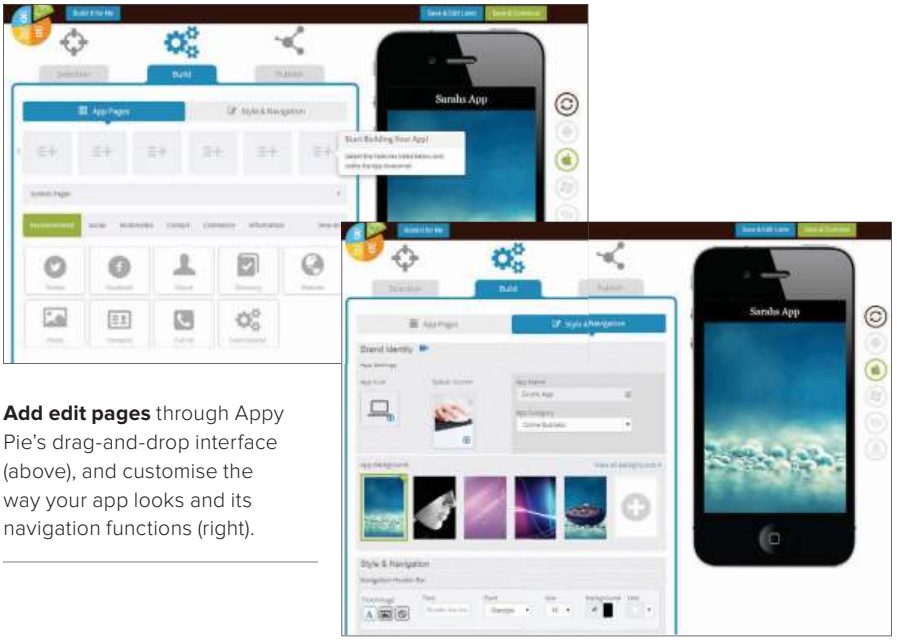
The main drawback of Appy Pie's service is that the app page layouts are rigid, and so anyone not familiar with code will end up with a cookie-cutter app. This isn't a bad thing, but if you're looking to create a work of art, Appy Pie's basic builder may be too simple for your project.

Getting started is a snap – you don't even have to sign up for an account to start building your app for free. Appy Pie offers three tiers of paid services, as well as an extremely limited free account, which basically functions as a trial for the paid services. The three tiers are labelled Basic, Gold and Platinum, and, like most of the services in this round-up, the middle tier will get you the most functionality for your money. The Basic plan starts at $7 (£4.50) per month, only supports Android devices, and does not allow for ads. The Gold option starts at $19 (£12) per month and supports both Android and iOS devices, and allows for monetisation and unlimited push notifications. The Platinum plan starts at

$33 (£21) per month, supports Android, iOS, Windows Phone, BlackBerry, and Kindle Fire, and also allows you to remove Appy Pie's branding – in essence creating a 'white label' app.

Building an app with Appy Pie is a three-step process: First, you name your app and choose a category; secondly, you build your app and add content; and third, you publish your app (though you'll still have to wait for it to be submitted and approved before it shows up in any app stores). Step One is straightforward – your app's name can be no longer than 30 characters and cannot contain any special characters, including apostrophes. (If your business is called 'Sarah's Diner', or something similar, you can change the display name that appears at the top of the app in step two.) Appy Pie then lets you categorize your app in one of 24 categories (this can be edited later), and has categories for businesses, law firms, restaurants, charities, as well as a broad 'other' category.

Step Two is the longest step, and this is where you'll do all of the app creation. Appy Pie's app builder features what it calls a 'drag-and-drop' interface (but what is more of a 'click-and-fill-out-a-form' interface) alongside a large live preview of what your finished app will look like. The builder has two main sections: App Pages, which is where you will add and edit the different pages for your app; and Style and Navigation, which is where you can edit how the app looks, including changing the background, icon, splash screen, colours and navigation layout.



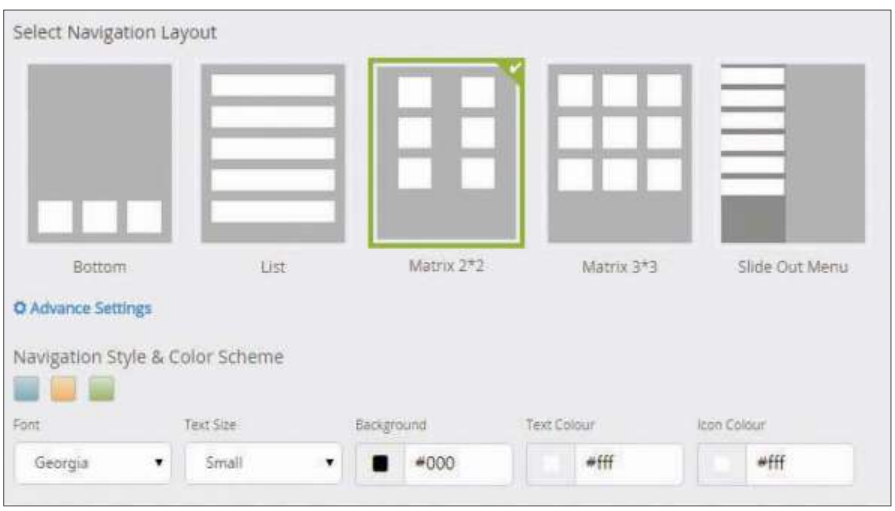
Add edit pages through Appy Pie's drag-and-drop interface (above), and customise the way your app looks and its navigation functions (right).

Adding pages and content to your app is easy. In the App Pages tab, you'll see several boxes along the top of the screen, each of which represents a different page in your app. To add a new page, simply click one of the boxes that doesn't currently have a page, and then choose a page layout to add it to the mix. Depending on what type of business you have, Appy Pie offers a variety of pre-made layouts, including information pages (about your company, contact, customer testimonials), social media pages (Facebook, Twitter, Google+, LinkedIn), multimedia pages (RSS feed, photo, video, blog), and mobile commerce pages (commerce, coupons, loyalty cards). Each layout has its own specific customisation options, but you'll always be able to change the page's name (how it appears in your app's navigation) and icon.

Some of Appy Pie's page layouts allow you to build your own content – there's a form builder for creating fillable forms, a quiz option, and straight text and code pages if you really want to build from scratch.

Once you've added pages to your app, you can start editing the aesthetics in the Style and Navigation tab. Here, you can change your app's icon, upload a new splash screen, change your app's category, and edit the title that appears at the top of the app screen (you can change it, upload a banner, or choose to have no title displayed at all). You can also upload a new background image – only one for the entire app, though, not per page. Appy Pie lets you pick from five different navigation layouts, including the classic five icons along the bottom of the screen, a list, two different matrices, and a menu that slides out when you tap a button in the upper-left corner.

If you spend a few hours with Appy Pie's builder, you can make a polished, professional-looking app with ease. While it won't necessarily be in the running to win any design awards, it should suit most small businesses, restaurants and events



Here are Appy Pie's navigation options.

Add in social networking features, and check out a working app preview before you submit it to the App Store.

looking to get their info out there and integrate social media and mobile commerce. The nicest thing about Appy Pie is that it's clearly designed with beginners in mind, and each page layout comes with its own video tutorial just in case you get lost.

Como

If you've already got a robust Facebook page or website, Como (como.com) makes app-making even easier than Appy Pie does. Como is very similar, but with one major difference – in the second step of Como's app-building process, you're asked to input your Facebook page or website URL, and then Como pulls your existing content and info to create a template for your app. This is handy because it helps give you an idea of what pages you might want to add to your app (Appy Pie recommends pages based on your app category, but Como chooses a category for you).

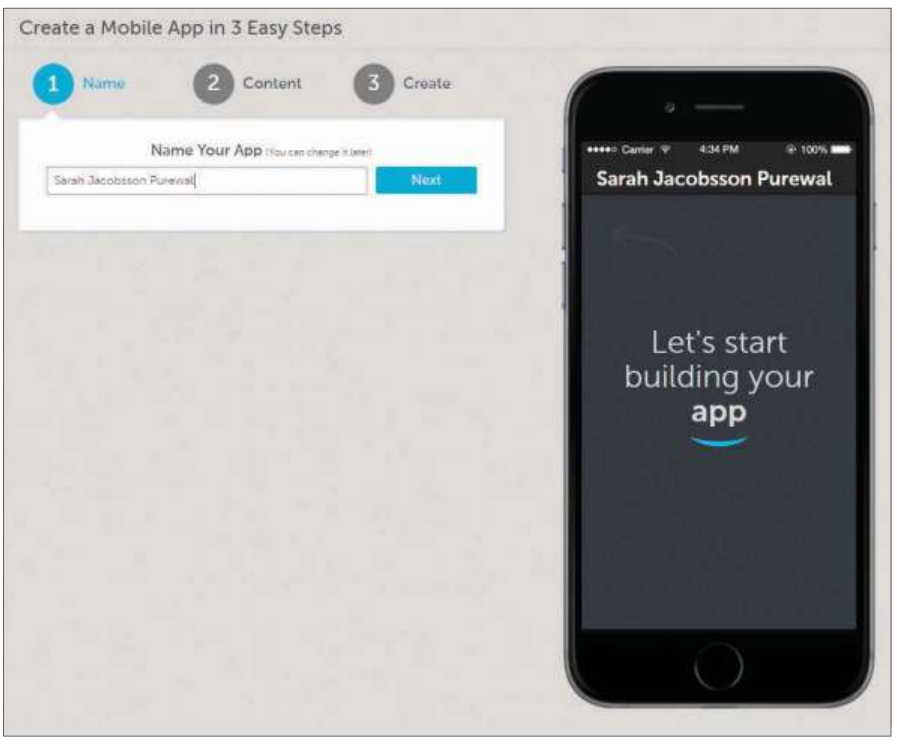
Of course, if you don't have a Facebook page or a website, you can still use Como's app builder; you'll just have to upload your own content.

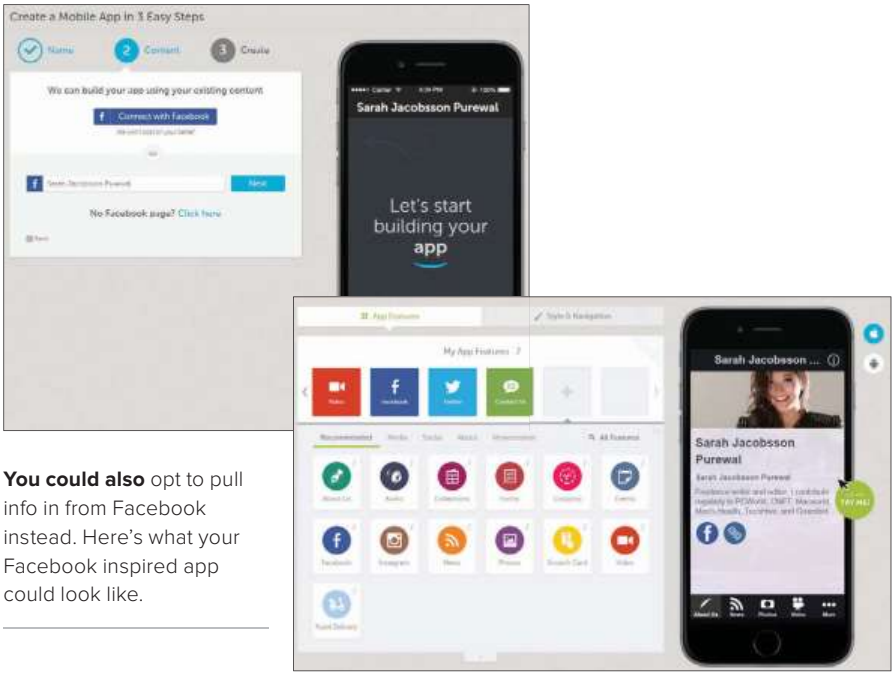
If you already have a website, Como takes that information and helps you format it into an app. Of course, you have to start by giving your app a name.

Como's app-building process also involves three steps. First, you name your app (apostrophes are not banned); secondly, you input your Facebook page name or website URL (or skip this step, if you don't have a Facebook page or website); and finally, you edit your prebuilt page and/or build your page in Como's app builder. It looks a lot like Appy Pie's, except it's a bit cleaner and more polished-looking. Like Appy Pie's builder, there are two sections: App Features, which is where you'll add pages and content; and Style and Navigation, which is where you'll edit the look of your app. There's also a large live preview of what your final app will look like to the right of the interface.

If you used Step Two, your app will already have some pages. To add a new page, click the Add Feature button and pick a page layout from the menu. Como offers plenty of page-layout options, including information pages (about your company, email/call/contact us, and map), social media pages (Facebook, Twitter, Instagram, RSS feed), and monetisation pages (food delivery, mobile commerce, loyalty cards, and coupons). For mobile commerce, you can add a Shopify store, integrate Yelp or OpenTable reviews, and create catalogues of items. Each page has its own specific customisation options, but most pages let you edit the page name, icon, and background image.

In Style and Navigation, Como offers themes (background image, colour scheme, navigation style) based on your app's category. For example, if you classify your app as a musician's app, you'll see themes like DJ, Jazz and Sound Waves. You don't have to use a theme, of course, but they offer a nice way to see how your page looks in different layouts and colour schemes before you make additional tweaks.



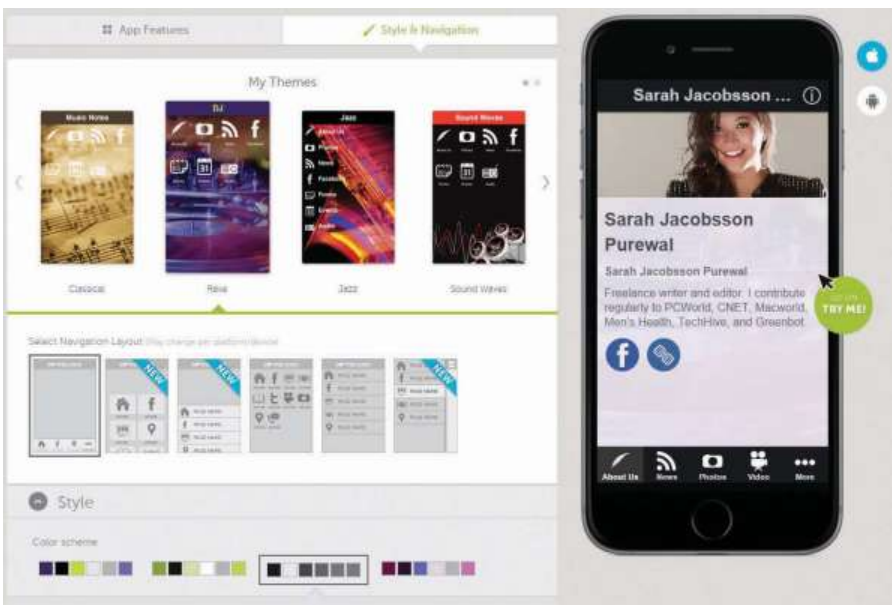


You could also opt to pull info in from Facebook instead. Here's what your Facebook inspired app could look like.

Here, you can change your app header, icon, splash screen, background image, and colours. You can also pick one of six different navigation layouts, including the classic five icons at the bottom of the screen, two different matrices, two different lists, and a slide-out menu.

Unlike the other services in this roundup, Como doesn't offer tiered pricing plans. Instead, there are only two options: The free plan, which limits you to five app downloads and 50 mobile visitors per month (basically a trial plan), or the paid plan, which starts at $29 (£18) per month and gets you full functionality, including unlimited users and downloads, unlimited push notifications, and advanced analytics.

Como's app builder is more intuitive than Appy Pie's, and everything is slightly more streamlined for businesses who need a solid, professional-looking app without having to spend hours uploading and adjusting content. It's also more expensive, though, since that $29 per month price is only what you get if you sign up for the two-year plan (it's $33 [£21] per month billed annually, while Appy Pie is $19 [£12] per month billed annually).



Como's Style and Navigation section suggests themes based on your app's category and content.

GoodBarber

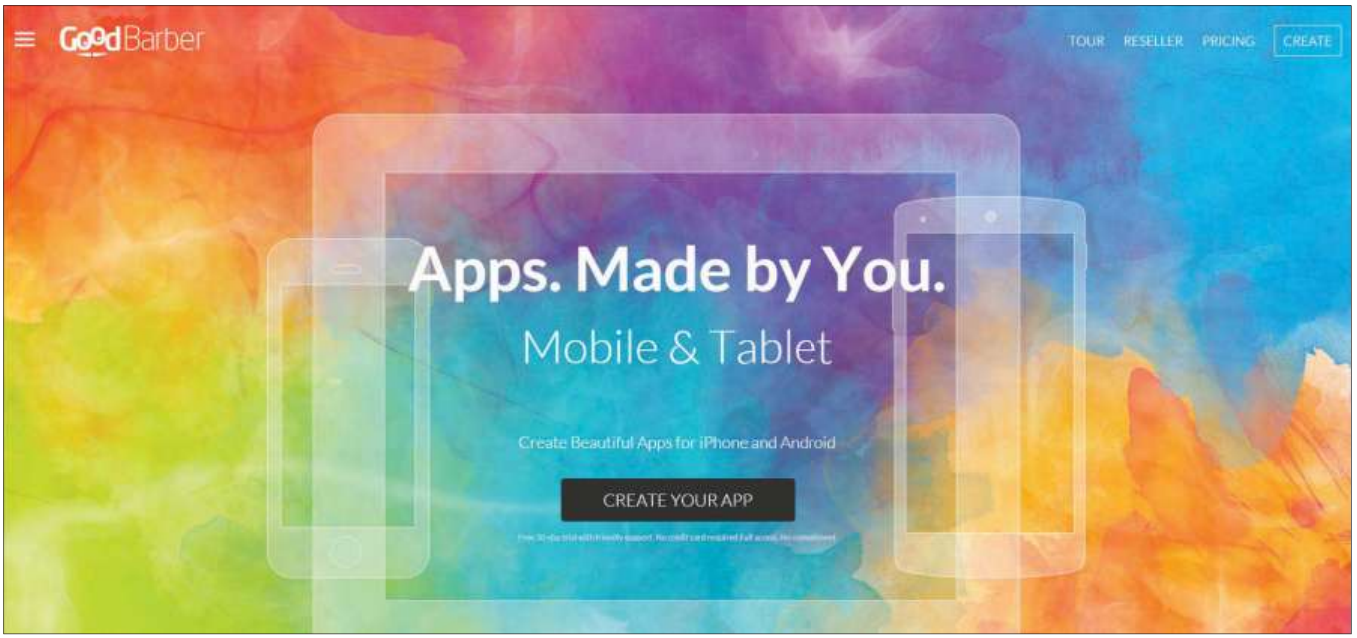
Both Appy Pie and Como are good choices if you're looking to build a straightforward, no-nonsense app for your business or restaurant. But what if you're looking for something a little more whimsical and, well, attractive?

GoodBarber (goodbarber.com) is all about good-looking apps – even if its splash page is a minimalist rainbow blend of watercolours and text. While Appy Pie offers up a few generic stock photos, and Como gives you four or five basic themes, GoodBarber has an entire theme library, complete with custom fonts and high-resolution stock photos from Unsplash (a free stock photo library). If you want to make a pretty app, and you don't have the time to find or create content yourself, GoodBarber can help you with aesthetics.

First, GoodBarber asks you to name and categorise your app. You can't use any special characters – not even spaces – in the name. Next, you'll be asked to create an account (just an email address and a password), before GoodBarber takes you to its app builder.

This is a bit more design-led than Appy Pie's or Como's, and doesn't try to lock you out of things such as audience stats or general settings before you've created your app. The builder features a live preview of what your final app will look like, along with seven steps for designing your app, which are located in a menu on the right side of the screen.

Step One is theme. GoodBarber has a collection of about 50, all of which have their own font, background, icons, and colours. The themes are polished and unique, and you can preview your app in a theme before you decide to change it. Step Two is navigation layout – GoodBarber lets you pick from eight different layouts, including a colourful typeface menu, a centre-text menu, and two different types of slide-out menus. In each menu, you can change the colours of both the text and the icons, as well as the texture of the icons. If you'd prefer to create your navigation layout from



GoodBarber's splash page is a minimalist rainbow blend of watercolours and text.

scratch, there's also an option to just enter code. Step three lets you edit the header (swap it out for a picture or add effects – iOS only) and body of your app (background, separators and margins).

After you've picked out a theme and fixing up the navigation, header, and overall aesthetic of your app, you can start adding content. GoodBarber offers a few different page layouts, including information (about the company, contact us, calendar and map), social media (Facebook, Twitter, Instagram), and e-commerce integrated with Amazon, Shopify, and Etsy. You can also add an Article page, which lets you display blog posts from WordPress, Blogger, TypePad, or an RSS feed, or even upload content through GoodBarber's CMS. In other words, this app could be your blog.

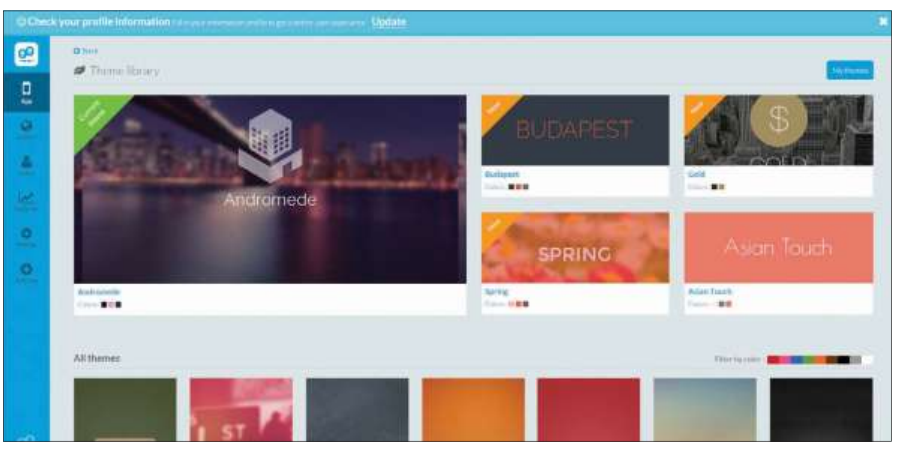
We're big fans of its last real step, which lets you design your sections. Each page has a few different layouts you can choose from, so you're not stuck with a generic Twitter feed or a list of articles. In Appy Pie and Como, the page layouts are fairly rigid, which means that some pages will inevitably end up looking very cookie-cutter. The last two steps after section design in GoodBarber just involve editing your splash screen and app icon.

You can try out GoodBarber's service for free for 30 days before you're required to upgrade to a paid plan.

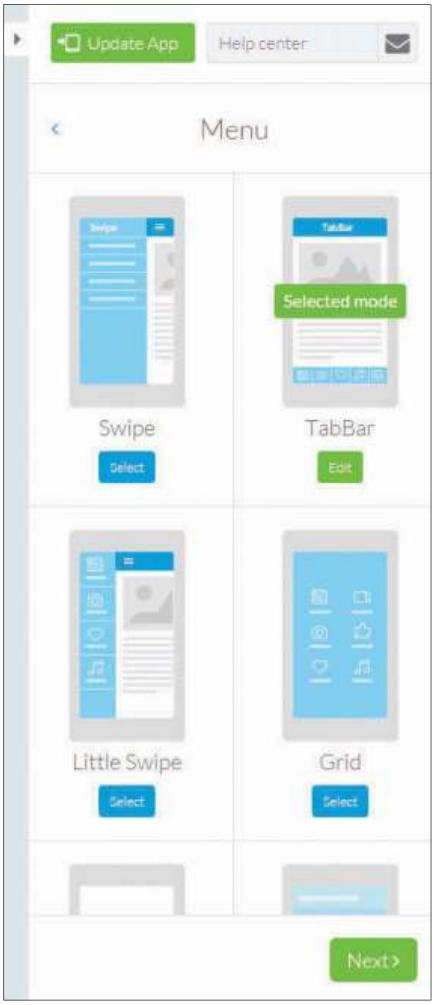
GoodBarber has an entire theme library, complete with custom fonts and high-resolution stock photos from Unsplash (a free stock photo library)

GoodBarber offers three tiers: Standard, Full and Advanced. The Standard plan, which starts at $16 (£10) per month, is extremely limited – this plan doesn't let you add any original content, which means you can't have an about page, contact forms, or basically anything that you've created. What you can have is an RSS feed, a website, and social media accounts – so your app will in essence be a hub for users to find your content elsewhere on the web.

The Full plan, which starts at $32 (£20) per month, gets you everything you need, including original content. You have access to all of GoodBarber's functionality: Android and iOS support, unlimited push notifications, advanced analytics, and the ability to add internal or third-party ad networks to your app. The Advanced plan, which starts at $48 (£31) per month, gets you just a few extras on top of the Full plan – namely, tablet support (adaptive design) and API access.



GoodBarber has an excellent theme library.



Once you pick your theme, select a layout.

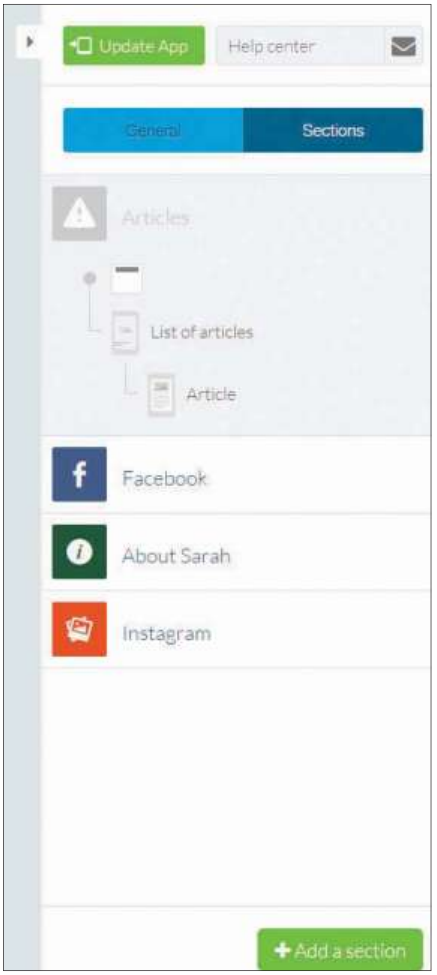
You can purchase API access on the Standard and Full plans for an extra $4 (£2.50) per month.

If you're willing to pay a little more per month, GoodBarber's apps can really step up your game. You will spend more time creating your app with this service, but you'll also have more tools – including a library of fonts and stock photos, as well as a built-in CMS – at your fingertips.

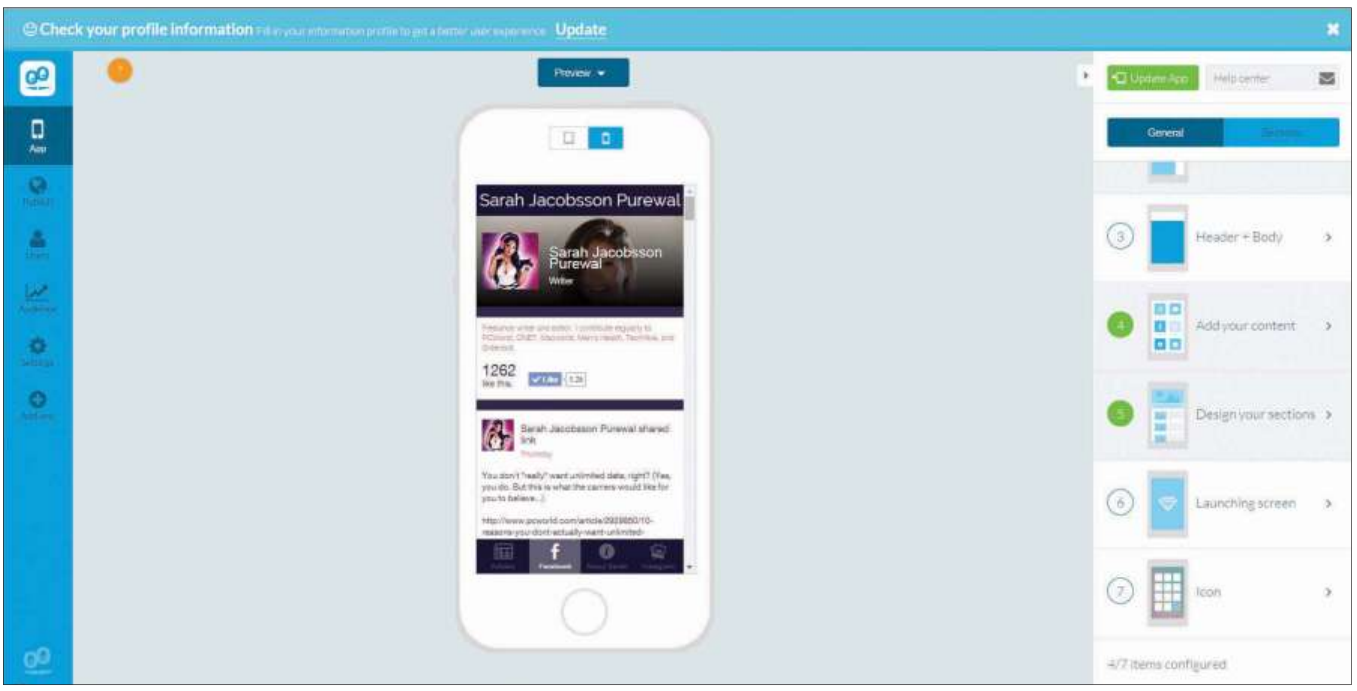
Go forth, and be mobile

If you're still on the fence about which service to try, you can try all of them, and more. Most DIY app-building services offer a free trial or a limited free account. While you won't be able to submit your app to the App Store for free (though you should still be able to test it out on your own device), you will be able to get an idea of what your app will look like before you commit to a monthly hosting fee.

Oh, and one other note – these monthly fees do not include the cost of an Apple Developer account, which will set you back $99 (£63) per year. While Appy Pie, Como, and GoodBarber will submit your apps to both the App Store and Google Play for 'free', they'll only do so if you provide them with your developer information (a Google Play developer account is a one-time $25 [£16] fee).



Once you've added your content, you can design what these sections look like.



And, of course, you can preview what your GoodBarber-based app will look like as you build it.

Complete guide to Apple devices

EVERYTHING YOU NEED TO KNOW ABOUT MACS, iPHONES, iPADS, iPODS AND OTHER APPLE PRODUCTS

Welcome to *Macworld*'s in-depth guide to every Mac, iPad, iPhone and iPod that Apple makes, as well as other hardware and software that comes out of Apple's HQ in Cupertino, California. The first two pages offer a quick summary, with detailed looks on the following pages.

Apple makes six different kinds of Mac, and each has subcategories and variations in specs and features. Some Macs are faster and more powerful, while other Macs have slower processors but are cheaper. This guide should help you identify which Mac best suits your needs.

There are now four different iPhones and five iPads to choose from, along with a collection of iPods and the Apple TV. Plus, we should soon see the launch of the Apple Watch. Read on to understand every product that Apple makes.

MacBook Air MARCH 2015

The MacBook Air is Apple's ultrathin and incredibly light laptop, sometimes referred to as an ultrabook. It comes in two screen sizes, 11in and 13in. Apple's cheapest MacBook Air costs £749. The range was updated in March 2015.

MacBook Pro MARCH 2015 MAY 2015

There are two types of MacBook Pro available: one with a high-resolution Retina display and flash storage; and a simple version, which is the only Mac to feature a CD/DVD drive (the model hasn't been updated since 2012). There are two screen sizes of MacBook Pro Retina available: a 13in and a 15in. The 13in was updated in March 2015, and the 15in in May 2015. It is more powerful than the MacBook Air, but the prices are a lot closer than they used to be. The cheapest MacBook Pro costs £999.

Mac mini OCT 2014

The Mac mini is a compact desktop computer measuring less than 20x20cm and is Apple's cheapest Mac, starting at just £399 – the same price as a 16GB iPad Air 2. It features an HDMI port, which makes this computer a popular option for a home media centre as you can plug it directly into your TV screen.

Mac Pro DEC 2013

The Mac Pro is Apple's professional Mac with a price tag to match – it starts at £2,499. It's a fully fledged workstation aimed at those who need the ultimate in power.

iMac OCT 2014 SEPT 2013 MAY 2015

The iMac is incredibly thin, with the whole computer concealed behind the gorgeous display. There are two different sizes of iMac available: the 21.5in and the 27in. The cheapest iMac costs £899. A new £1,599 Retina Mac has joined the flagship 5K Retina Mac introduced in October 2014.

NEW

MacBook APRIL 2015

This is Apple's newest Mac. It's built more for style and portability than for the practicalities of computing – it has only one port and a basic processor – but it does have a Retina display, and it does come in gold, silver and space grey, just like your iPhone. This new Mac model went on sale in April 2015.

iPad Air OCT 2014

The iPad Air is Apple's biggest tablet. There are two models, both with a 9.7in Retina display: the original iPad Air, launched in 2013, and the iPad Air 2 with Touch ID, released in October 2014. The newer model is thinner, faster and more powerful, and there is a gold finish available as well as the original black and silver variants. The older iPad Air costs £319 (16GB) or £359 (32GB). The iPad Air 2 costs £399 (16GB), £479 (64GB) or £559 (128GB). You can buy an iPad with just Wi-Fi or with Wi-Fi and cellular coverage – add £100 to get the price with cellular coverage.

iPad mini OCT 2014

Apple sells three different iPad mini tablets. There's the original iPad mini, first launched in 2012 and now available for £199 (16GB). There is the iPad mini 2, launched in 2013, which costs £239 for the 16GB version, or £279 for 32GB.

And there is an iPad mini 3, launched in October 2014 and starting at £399 for 16GB, £399 (64GB) and £479 (128GB). All three models are of a similar size with 7.9in screens. The original iPad mini lacks a Retina display, and only the iPad mini 3 offers Touch ID. Like the Air, you can pay £100 more to get a cellular version so that you can surf using 3G or 4G.

iPod JULY 2015

When Apple introduced the iPod in 2001, it started a revolution that eventually ushered in the iPhone and the iPad. The original iPod is now long gone, and the company no longer sells the iPod classic, which was most like the original. However, you can still buy a number of different iPods. There's the iPod touch (from £159), which is as close as you can get to an iPhone without the phone, the iPod nano (£129) and the iPod shuffle (£40). The original iPod was a music player that famously allowed you to carry 1,000 songs in your pocket. Today's iPod touch lets you watch videos and download apps from the iOS App Store. The iPods were updated in July 2015, with new colours across the range and a faster processor in the iPod touch.

iPhone 6 Plus SEPT 2014

The new iPhone 6 Plus is Apple's first phablet-style phone. Phablet is the name used for phones that are so big that they are like small tablets. The iPhone 6 Plus has a 5.5in screen, so it's really not very much smaller than the iPhone mini. In addition to the bigger, better screen, the iPhone 6 Plus comes with a better camera than the iPhone 6. Prices start at £615 for the 16GB version; the 64GB version costs £699 while the 128GB iPhone 6 Plus costs £789.

iPhone 6 SEPT 2014

The iPhone 6 has a bigger screen than the iPhone 5s: 4.7in (measured diagonally, corner to corner) compared to the 4in of the 5s. The iPhone 6 is also thinner and lighter than the previous year's model. Like the iPhone 6 Plus, the iPhone 6 also comes equipped with a better A8 processor and an NFC chip for mobile payments. It costs £539 (16GB), £619 (64GB) or £699 (128GB).

Apple TV JAN 2013

The Apple TV is a 10cm square box that measures less than an inch high. You plug the device into your HDTV so that you can watch movies and TV shows from the iTunes Store. You can also play content from Netflix (for a £5.99 a month subscription), view videos on YouTube and Vimeo, and stream music and photos from iCloud. You can also view whatever is on your iPhone, iPad and iPod touchscreen, and push content from your Mac to your TV screen. The Apple TV costs £79, but the hardware hasn't been updated since 2012.

iPhone 5s SEPT 2013

The 5s is the iPhone that Apple introduced in September 2013. It's available in gold, silver or grey and has a Touch ID button allowing fingerprint scanning for security, rather than the older-style home button with a square in the middle. The Touch ID button is the most obvious difference. Apple is now selling only 16GB (£459) and 32GB (£499) models of the iPhone 5s.

iPhone 5c SEPT 2013

The iPhone 5c has a polycarbonate (plastic) shell that is available in six bright colours. Apple released the iPhone 5c alongside the iPhone 5s in September 2013. On the inside the 5c is pretty similar to the iPhone 5, although the camera on the 5s is a better model. Apple sells an 8GB iPhone 5c for £319.

Apple Watch APRIL 2015

Apple unveiled its first foray into wearable technology in September 2014, and six months later launched. There are 38 different Apple Watches available – thanks to the combination of the three different Apple Watch categories, two different face sizes, and the accompaniment of straps. Apple has said that Apple Watch prices will start at £299 for the 38mm Apple Watch Sport or £339 for the 42mm version. The Stainless Steel Apple Watch will cost from £479, while the 18-carat gold Apple Watch Edition will cost from £8,000.

Apple Store

HOW AND WHERE TO BUY YOUR APPLE PRODUCTS

It's easy to buy a brand-new Mac, iPad or iPhone from Apple. The simplest way is to got to store.apple.com/uk to purchase from the online store. Here you will find every current Mac, iPad and iPhone, and lots of accessories. Alternatively, if you'd prefer to try the product out, you could walk into the Apple Store on your high street or in your closest shopping mall. Not sure where your closest Apple Store is located? Apple has stores all over the country, 39 in total, and you can look for your local store at apple.com/uk/retail.

Unfortunately, as a rule Macs are not cheap but if you are looking for a bargain you can also pick up a Mac, iPad or iPhone second-hand from Apple. It's possible to buy refurbished Apple Macs, iPads, and other of the company's products, from a special section of the online store. Go to store.apple.com/uk and scroll to the bottom of the page where you will see a link to Refurbished & Clearance.

Refurbished Macs and iPads are likely to be brand new but returned models (if it is from a previous year) or reconditioned current devices. A reconditioned Mac could be an ex-demonstration model used during Apple teaching programmes, or a unit sold to a customer who subsequently decided to return it. The returned unit may have been faulty (and fixed) or may simply have been returned under the standard sale-and-returns procedure – Apple allows any customer to return a Mac bought from the Apple Store within 14 days for a refund as part of its standard returns policy.

The important thing to note is that Macs bought from the Apple Refurb Store are not discernibly different from new ones bought direct from the Apple Store. All the Macs bought from the Apple Refurb Store are cleaned, checked, tested and visually indistinguishable from brand-new models.

The only noticeable difference in our experience is that an Apple refurb Mac will be packaged in a brown box rather than the white retail box they normally arrive in. Aside from that, we have yet to pick up a Mac from the Refurb Store and find it wanting.

The price for reconditioned Macs changes frequently but is typically 10- to 20 percent less than the original price. With Macs commanding a high retail price, this reduction can represent quite a difference. For example, you can find a 2014 (that's the current generation) 1.4GHz iMac on the Refurb Store for £759 – a £140 saving on the £899 you'd pay for the exact same model in the Apple Store. There are even bigger savings to be made on older models. You can also find refurbished iPads on the store, but Apple doesn't resell second-hand iPhones.

Apple's online store can be found at store.apple.com/uk.

You may also be able to get a deal on a new Mac by picking up one from your local Apple reseller, such as John Lewis and PC World, or Apple premium resellers like iStore, Stormfront, Solutions Inc, Western Computers and KRCS. They do have sales, and although Apple bargains are rare, they do come along occasionally.

However, you should beware that because Apple is strict with pricing and the margin that third-party retailers can make, it is rare that you will find a genuine bargain when buying a new Apple product from someone other than Apple. You should always first visit Apple's online store to find out what is on offer from the mothership, and make sure that if you are buying an outdated model you are doing so knowingly. Copy down the specification and product code of the model you want, and use that in your search. If you know what to look for you could grab a bargain – just make sure that you aren't buying last year's model while being sold the idea of this year's.

One of the benefits of buying from Apple is its warranty and returns procedure, even for refurbished products. Apple states: "Before we put a refurbished Mac, iPod, iPad or Apple TV up for sale in special deals, it undergoes a rigorous refurbishment process to make sure it's up to Apple's tough quality standards."

More importantly, a reconditioned Mac comes with the same one-year warranty (extendable to three years with AppleCare protection). You also get the same sales and return procedure with Apple, and can return a Mac bought from the Refurb Store within 14 days if you're not happy with it.

The key thing, as always, is to know exactly what you want, and exactly what you are getting, especially if you are buying from a private seller. Get it all in writing, and if at all possible view the device you are buying, and use it, before you purchase. Always use a credit card to make expensive purchases, or a secure payment service such as PayPal. This will make it much easier to chase up if there is a problem. And remember, if it looks too good to be true, then it probably is: you really want to see proof of purchase before you buy a second-hand Mac to ensure it hasn't been stolen

Apple Store, Covent Garden, London

Apple Store, Regent Street, London

MacBook

THE LATEST ADDITION TO APPLE'S LAPTOP LINE-UP

There are actually two standard MacBook models available, both with a 12in screen (measured diagonally). Dimensions for both unit are identical: 28.05cm by 19.65cm, and 3.5mm at the edge tapering to 131mm thick (the MacBook Air tapers from 17mm to just 3mm). The new MacBook weighs less than a kilogram at 920g.

The key difference between the two models is the amount of storage available, and the speed of the processor, although the most obvious difference is that there are three colour choices: gold, silver and space grey, just like the iPhone.

The entry-level MacBook unit offers a 1.1GHz dual-core Intel Core M processor (Turbo Boost up to 2.4GHz), and 256GB PCIe-based flash storage. The other MacBook unit offers a 1.2GHz dual-core Intel Core M processor (Turbo Boost up to 2.6GHz), and 512GB PCIe-based flash storage. Both models offer 8GB RAM and Intel HD Graphics 5300.

There don't appear to be any build-to-order options, which would normally allow you to add a faster Intel processor, more storage, and more RAM. However, Apple did indicate in its press release announcing the product that there would be.

The new MacBook sports many new features including a Force Touch trackpad that utilises built-in force sensors so that when you click you receive haptic feedback, and Force Click – this adds a new dimension to clicking, a new way of right-clicking, perhaps. There is also a new keyboard with keys slightly more spaced out than previously. Many of the new technologies incorporated in the new design have allowed Apple to make it slimmer and as lighter than any other Mac. For example, thanks to the new Core M chip the MacBook doesn't require fans, and by slimming down the logicboard Apple has been able to utilize every last corner for battery. Apple claims the MacBook is the "world's most energy efficient notebook".

Even the Retina display is the thinnest screen ever on a Mac. It offers a 16:10 aspect ratio and a resolution of 2304x1440. It also uses less energy than Retina displays on other Macs.

Apple admits that the MacBook is designed for the wireless world, and it has to be: there is only one port. This next generation USB-C port will support power in and out, so you can charge your MacBook from it, as well as plug in a hard drive or other peripherals. You will need an adaptor if you are hoping to plug more than one device in at a time, though.

MacBook Connections

The MacBook infamously had only one port (plus a headphone port). That's the trade-off required for Apple to create such a thin Mac. The single port is USB-C, which is a new industry standard that offers 5Gb/s data transfer via USB 3.1, as well as charging and DisplayPort 1.2. You will be able to plug anything into that port – but you will require an adaptor if you want to plug more than one thing in at a time.

Like the MacBook Air, the MacBook doesn't feature an Ethernet port, so if you want to plug it into a wired network at work or on holiday you will need to purchase an adaptor. However, the MacBook does offer 802.11ac Wi-Fi so it's unlikely that in today's wireless world you will need to plug it into a network.

Speed

The MacBook will not be Apple's fastest Mac, tests of other computers that use the same chip suggests that the MacBook will be slower than last year's entry level MacBook Air, however, it does at least feature a SSD drive, so it could prove faster than Apple's other slowest Macs: the £899 iMac and the £399 Mac mini which utilize slower hard drive technology.

We're waiting to get the MacBook in our labs, and as soon as we do we will be testing them thoroughly.

Price

There are many Mac users for whom the MacBook will not be ideal. This is not a powerful computer and it is no replacement for the MacBook Pro. Nor is it necessarily a replacement for a MacBook Air while it is possible to upgrade to faster MacBook Air models for a lot less money.

The MacBook does have some points in its favour. It is 160g lighter than the MacBook, smaller (even than the 11in MacBook Air) and thinner, so if you are carrying it around in your bag that might be a relevant factor in your decision. The other big difference is that the MacBook ships with just 8GB RAM while the MacBook Air ships with 4GB RAM, but you can always upgrade that at point of purchase.

Whether the tradeoff of weight and size is significant to you will depend a lot on what you will be doing with the MacBook. If the majority of what you do on your Mac is everyday tasks, such as sending and receiving email, browsing the web, and using office applications, the MacBook should be quite capable of meeting your needs. If you're expecting to edit movies using Final Cut Pro we don't expect this Mac to cut the mustard.

Prices

The 256GB, 1.1GHz MacBook will cost £1,049

The 512GB, 1.2GHz MacBook will cost £1,299

MacBook Air

APPLE'S THINNEST, LIGHTEST LAPTOP

There are four standard MacBook Air models available, in two sizes. In March 2015, each MacBook Air was updated and now offers a 1.6GHz dual-core Intel Core i5 processor, 4GB of RAM and Intel HD Graphics 6000 as standard.

There are also build-to-order options that let you add a faster Intel processor (the 2.2GHz dual-core i7, for £130), more storage (512GB SSD for £240) and 8GB of RAM (for £80).

The only real differences between the different models are the size of the screen, the amount of storage and battery life. Both the 11in and 13in MacBook Air offer either 128GB or 256GB SSD options. The 11in MacBook Air offers nine hours of battery life, compared with the 12 hours of the 13in MacBook Air. The 11in MacBook Air weighs 1.08kg and its dimensions are 30x19.2cm. The 13in MacBook Air weighs 1.35kg and its dimensions are 32.5x22.7cm. Both models are just 1.7cm thin at the edge and taper to 3mm at the front.

Because of its smaller screen, the 11in MacBook Air offers fewer pixels than the 13in model – up to 1366x768 at a 16:9 aspect ratio, compared with 1440x900 at a 16:10 aspect ratio on the 13in. That display doesn't come close to what you get from the 13in MacBook Pro Retina model, though – that Pro offers 2560x1600 Retina resolution at 227 pixels per inch.

The two Airs have different aspect ratios. The 11in model is the only Mac with a 16:9 ratio – the same as a widescreen TV. Some people find the narrower screen more restrictive. The MacBook Air doesn't have a great many ports – that's the trade-off required for such a remarkably thin computer. There's no ethernet port, for example, so if you want to plug it into a wired network at work or on holiday, you'll need to buy an adaptor. However, the MacBook Air does offer built-in 802.11ac Wi-Fi, so it's unlikely that in today's wireless world you will ever need to plug it into a network anyway.

The MacBook Air also lacks an optical drive – the only Mac still to feature a CD/DVD drive is the MacBook Pro (the non-Retina model). We don't find we have much use for an optical drive these days, but if you really think you need one there is always the option of purchasing Apple's USB SuperDrive for £65.

There are two USB 3 ports, and you can also connect accessories (including external storage and monitors) to your MacBook Air via its Thunderbolt port, Apple's high-speed connector. Thunderbolt 1 is slightly slower than the Thunderbolt 2 ports on the Retina MacBook Pro, but still faster than USB 3 (20Gb/s for Thunderbolt 2, compared with 10Gb/s for Thunderbolt 1 and 5Gb/s for USB 3). The 13in MacBook Air comes with an SDXD card slot, but the 11in model doesn't.

Speed

The MacBook Air is one of the slowest Macs around – along with the £899 iMac and the £399 Mac mini. However, one of the MacBook Air benefits is its solid state drive (sometimes referred to as flash), which speeds up operation. Flash memory is superior to a hard drive because it is faster at reading data and the 13in drive is even faster than the 11in. This makes a huge difference when running your Mac: opening documents, starting applications and even booting up all happen much faster.

Whether all that matters to you depends a lot on what you will be doing with your computer. If the majority of what you do on your Mac is everyday tasks, such as sending and receiving email, browsing the web and using office applications, then the MacBook Air is quite capable of meeting your needs. You can also happily use it for editing short videos or working with photos.

Price

There are four standard versions of the MacBook Air available and various build-to-order options that you can add on a point of purchase.

Prices
11in MacBook Air 1.6GHz (128GB) £749
11in MacBook Air 1.6GHz (256GB) £899
13in MacBook Air 1.6GHz (128GB) £849
13in MacBook Air 1.6GHz (256GB) £999

Build-to-order options
2.2GHz dual-core Intel i7 £130
8GB RAM £80
512GB flash storage £240

We recommend that you purchase the extra RAM when you buy the MacBook Air as it cannot be upgraded later. If you feel you need more storage, you could buy an external hard drive or an NAS drive to store content on and back things up when necessary.

MacBook Pro

A SUPERIOR MAC LAPTOP WITH A DISPLAY TO MATCH

There are five standard Retina MacBook Pro models available, in two sizes, as well as a non-Retina MacBook Pro, which we will cover at the bottom of this page. In March 2015, Apple updated the 13in models, and in May 2015 it updated the 15in models.

The key selling point is the Retina display, so called because it delivers maximum optical quality – the human eye is unable to distinguish any more pixels. That make a Retina display about as precise as you can get, ideal for creative work.

The 13in model offers 2560x1600 Retina resolution at 227 pixels per inch, while the 15in model offers 2880x1800 resolution at 220 pixels per inch.

Unlike the MacBook Air range, the five Retina MacBook Pro models are substantially different in terms of spec, with the 15in models being equipped with quad-core i7 chips (2.2GHz or 2.5GHz), 16GB of RAM and more. The three new 13in Retina MacBook Pro units offer a dual-core Intel Core i5 processor (2.7GHz on two models, and 2.9GHz on the high-end version), 8GB of RAM, and Intel Iris graphics as standard.

The 13in models are available with 128GB, 256GB or 512GB flash storage, while the 15in models skip the 128GB version, offering only 256GB or 512GB.

There are various build-to-order options for the 13in models that allow you to add a faster Intel processor (a 3.1GHz dual-core i7, for £170), more storage (1TB SSD for £400) and 16GB of RAM (for £160).

The build-to-order options available for the 15in models include a faster 2.8GHz quad-core i7 Intel processor for £150, and 1TB storage for £400. It's worth remembering that the 2.8GHz clock speed of i7 Intel upgrade doesn't mean that the chip is slower than the 3.1GHz dual-core processor offered with the 13in MacBook Pro Retina model: it's an i7 and it's a quad-core, so it will be faster.

One of the key distinctions between the MacBook Air range and the MacBook Pro Retina models is battery life. The 11in MacBook Air offers nine hours of battery power and the 13in MacBook Air offers 12 hours. This compares with nine hours for the 13in MacBook Pro Retina, and nine hours for the 15in Retina model.

The other significant difference between Apple's laptop ranges lies in their weight and dimensions. The 13in Retina MacBook weighs 1.57kg, compared with the 1.35kg of the 13in MacBook Air. However, the dimensions of the 13in Retina MacBook are 31.4x21.9cm compared with 32.5x22.7cm for the MacBook Air – so the 13in Air is a slightly larger unit.

The 13in MacBook Pro isn't very much thicker than the MacBook Air either, measuring 1.8cm, while the Air is just a centimetre thinner, measuring 1.7cm at its thickest point (though it slims to 3mm at the front edge). The 15in MacBook Pro with Retina display measures 35.9x24.7cm and weighs 2.02kg. It's the same thickness as the 13in model at 1.8cm.

The MacBook Pro with Retina display has a few more ports on offer than the MacBook Air. Like the MacBook Air, the MacBook Pro Retina doesn't feature an ethernet port, but it does have built-in 802.11ac Wi-Fi, and if you need to plug into a wired network you will be able to buy an adaptor separately.

There are two USB 3 ports, but you can also connect accessories (including external storage and monitors) to your Retina MacBook Pro via the two Thunderbolt 2 ports (that's one more than on the MacBook Air, which uses the slower Thunderbolt 1). Thunderbolt is Apple's high-speed connector, which is faster than USB 3 (20Gb/s compared with 5Gb/s). You can buy various adaptors that let you plug FireWire 800 hardware, for example, into this port.

You will also find an HDMI port (for plugging into your TV) and a SDXC card slot (for your camera's memory stick) on both Retina MacBook Pro models.

If you are looking for a Mac capable of playing a DVD or CD, then you may want to look at the MacBook Pro without Retina display (see below), or buy a £65 SuperDrive separately. The new 13in MacBook Pro models come with Apple's ForceTouch trackpad, which will change the way you interact with your Mac.

Speed

The 13in MacBook Pro Retina is faster than the MacBook Air, so if it's the fastest 13in MacBook you want then it's worth spending a little more on the Retina display model.

However, if you want the fastest Retina MacBook Pro, you really need to look at the 15in models. The 13in models have a dual-core processor, while the 15in models have a quad-core processor, and right up at the top of the range the 15in MacBook Pro with Retina display features a Core i7 2.5GHz processor.

Price

There are five standard versions of the Retina MacBook Pro plus a range of build-to-order options that you can add on to your unit at the time that you purchase it. You can also purchase the MacBook Pro without Retina display, but we will deal with that unit separately, below.

Prices

13in Retina MacBook Pro 2.7GHz i5 (128GB) £999
13in Retina MacBook Pro 2.7GHz i5 (256GB) £1,199
13in Retina MacBook Pro 2.9GHz i5 (512GB) £1,399
15in Retina MacBook Pro 2.2GHz i7 (256GB) £1,599
15in Retina MacBook Pro 2.5GHz i7 (512GB) £1,999

Build-to-order options

13in Retina MacBook Pro
3.1GHz dual-core Intel i7 £170
16GB RAM £160
1TB flash storage £400

15in Retina MacBook Pro
2.8GHz quad-core Intel i7 £150
1TB flash storage £400

If you think that you might need the extra RAM in your 13in Retina MacBook Pro, then we recommend that you purchase the extra RAM when you buy the Mac as it cannot be upgraded subsequently. If you feel you need more storage, you could buy an external hard drive or an NAS drive to store content on and back things up when necessary.

Non-Retina MacBook Pro

As we mentioned at the start, the non-Retina MacBook Pro is the only Mac to offer an optical drive; it is also the only Apple laptop to still use a hard drive. The non-Retina MacBook Pro hasn't been updated since 2012 and many have been predicting its demise. That it still lives on is testament to the fact that there are people out there who want a Mac with a CD/DVD drive and a big hard drive. It offers a 2.5GHz dual-core Intel Core i5 processor, 4GB of RAM, a 500GB hard drive, and costs £899.

Mac mini

A TINY DESKTOP THAT'S APPLE'S CHEAPEST MAC

Two years after Apple last updated the Mac mini, it revamped its entry-level Mac and lowered prices. That October 2014 revamp resulted in three models of Mac mini.

The cheapest of the three Mac mini models has the same 1.4GHz dual-core processor and integrated graphics chip to be found on the MacBook Air and the entry-level iMac, so it's no surprise that the new Mac mini's processor and graphics performance is close to that of the current MacBook Air range and practically identical to the new £899 iMac. The MacBook Air has the edge due to its flash storage, while the Mac mini and iMac still feature a hard drive as standard.

The other two Mac minis offer Intel dual-core i5 2.6GHz and 2.8GHz processors with Intel Iris graphics. These chips are comparable to the processors inside the 13in Retina MacBook Pro, but, as with the MacBook Air, you can expect their faster flash storage to give these models a performance boost.

The Mac mini offers Intel i5 dual-core processor options as standard. There are i7 processors available at point of sale, but these are still only dual-core. Apple's previous generation of Mac mini models offered better, quad-core processors.

You can get a 2TB Fusion Drive for an extra £80 when you buy the £799 Mac mini, taking the price to £879. Only the top-of-the-range model offers this option.

The 2012 Mac mini server version offered a 2TB hard drive, which made it a popular choice among those looking for a media server, so Apple's decision to offer this 2TB Fusion Drive is probably a reaction to this.

The Mac mini weighs 1.22kg and its dimensions are 19.7x19.7cm. Its height is just 3.6cm.

The Mac mini's HDMI port makes it very popular for those wishing to set up a Mac media centre in their living room. This is despite the fact that the Mac mini lacks an optical drive – the only Mac that still features one is the MacBook Pro (the non-Retina model). There's not much call for an optical drive these days, but if you really think you need one there is always the option of purchasing Apple's USB SuperDrive for £65.

You will also find four USB 3 ports, an SDXD card slot, two Thunderbolt 2 ports and an IR receiver. The Mac mini used to offer a FireWire 800 port, which will be important to those who have previously made big investments in FireWire peripherals, although you could purchase a Thunderbolt to FireWire adaptor and continue to use your FireWire devices (there are two Thunderbolt 2 ports on the Mac mini, offering a throughput of 20Gb/s). The only Mac that still offers FireWire is the non-Retina MacBook Pro.

Another reason why the Mac mini has been a popular choice was the ease with which it could be upgraded. RAM, for example, could be slotted simply into place – unheard of in the majority of current Macs. Unfortunately this is no longer an option with the latest models, and you have to add extra RAM at the point of purchase if you think you will need it.

In the past the Mac mini has been pressed into service as a graphic designer's workstation, a home media centre for the family and even a web server for hosting entire commercial websites. However, the latest changes make this model more suited for consumers looking for the cheapest Mac available.

Speed

The Mac mini is not one of Apple's fastest Macs. The processor is comparable to the MacBook Air's, but the mini is scuppered by its slower hard drive. However, you could upgrade your Mac mini to a Fusion Drive for another £200, bringing the benefit of a faster flash drive combined with 1TB of standard storage. It's a setup that could deliver you a surprisingly speedy Mac for just £599.

The big disappointment with the current range of Mac mini models is that they lack the processor performance of the previous models, first introduced in 2012. The October 2014 update saw the departure of quad-core processor options, for example. In our Geekbench tests we saw a very small increase in single-core mode, but the new top-of-the-range model scores just 56% of the older top-of-the-range model's speed when it came to multi-threaded applications. At least in terms of graphics processing the new Mac minis take the upper hand, benefiting from newer integrated graphics chips.

Price

There are three Mac minis available, with a few build-to-order options that you can add on at point of purchase.

Prices

Mac mini 1.4GHz dual-core i5 (500GB) £399
Mac mini 2.6GHz dual-core i7 (1TB) £569
Mac mini 2.8GHz dual-core i7 (1TB Fusion drive) £799

Build-to-order options

3GHz dual-core Intel i7 £160
16GB RAM £160
1TB Fusion Drive £160
256GB SSD £160
512GB SSD £240

If you think you might need the extra RAM we recommend you purchase it when you buy the Mac mini. It used to be possible to upgrade the RAM in a Mac mini but this is no longer possible as it is now soldered on. We would recommend the Fusion Drive option as the SSD part of the storage will speed things up considerably, while the extra capacity of the drive is likely to come in handy. If you are setting the Mac mini up as a home media centre you may want an optical drive, but you can always purchase a SuperDrive for £65, and continue to play DVDs and CDs that way.

iMac

APPLE'S SUPER-THIN, ALL-IN-ONE DESKTOP COMPUTER

You may think the iMac was only recently updated, with a new 5K Retina iMac joining the one introduced in October 2014. However, the rest of the iMac range, with the exception of the £899 model introduced in June 2014, has not been updated since September 2013. The iMac line-up includes three 21.5in versions, one 27in model and two Retina 27in systems.

The £899 entry-level 21.5in iMac has a 1.4GHz dual-core i5 chip, 8GB of RAM and a 500GB hard drive. Next up is an iMac that for another £150 gives you a faster 2.7GHz i5, 8GB of RAM and a 1TB hard drive. For another £150, the top-of-the-range 21.5in iMac offers a 2.9GHz i5, 8GB of RAM and a 1TB hard drive.

All the 27in iMacs also offer quad-core i5 chips, which will deliver more power than the smaller iMacs. The entry-level 27in iMac has a 3.2GHz quad-core i5 processor, 8GB of RAM and a 1TB hard drive, but lacks a Retina display.

There are two 27in Retina models. The original offers a 3.5GHz quad-core i5 processor with 8GB of RAM as standard (you can add 16GB or 32GB of RAM and a 4GHz quad-core i7 at point of purchase for a price), plus a Fusion Drive as standard. It will cost you £1,849. There's now a new £1,599 model with 3.3GHz processor. The Retina iMacs use AMD Graphics, while the non-Retina 27in uses nVidia.

You may be wondering why the iMacs don't yet feature SSD flash drives (with the exception of the Fusion Drive in the top of the range Retina iMac). So are we. Luckily, there are various build-to-order options which allow you to add Fusion Drives and flash storage, as well as up to 16GB of RAM, and faster processors (3.1GHz dual-core i7, for £160 on the 21.5in; 4GHz quad-core i7 for £200 on the flagship. Flash storage options include 256GB SSD for £160, 512GB SSD for £400, and a Fusion Drive (which combines flash storage with a hard drive) for £160. The Fusion Drive is a great solution, allowing you to benefit from more storage capacity and a faster experience.

The only upgrade options on the entry-level £899 iMac are the Fusion Drive (£200) and other SSD options.

The graphics cards are another differentiator between the different iMacs. The £899 model features the Intel HD 500 found in the MacBook Air, the next model up has an Intel Iris Pro, while the top-of-the-range 21.5in iMac features the nVidia GeForce GT 750M. The non-Retina 27in model offers the nVidia GeForce GT 755M.

The specs of the 21.5in iMacs are now below the MacBook Air and MacBook Pro, so it may be worth the laptops for power. Obviously the need for portability may play a big part in a choice between the two, though. Remember that if you choose a laptop, you can always plug it into your screen when you are at your desk.

Wondering how much space it will take up on your desk? The 21.5in iMac measures 52.8x45cm. The 27in iMac dimensions are 65x51.6cm. The screen is just 5mm thick. The base of the stand is 17.5cm deep on the 21.5in and 20.3cm on the 27in. The iMacs weigh 5.68kg or 9.54kg, so we don't recommend carrying them around.

The iMac offers an SDXC slot, USB slots, Thunderbolt 1 ports, 802.11ac Wi-Fi and ethernet. The Retina iMacs are the only ones with Thunderbolt 2.

There is no optical drive. Apple traded in the built-in SuperDrive when it slimmed down the monitor to a superthin 5mm. If you really think you need one, you can always buy Apple's USB SuperDrive for £65.

Speed

The flagship Retina iMac is one Apple's fastest Macs, and comparable to the Mac Pro. In fact, we would prefer the Retina iMac thanks to its gorgeous 5K Retina display (an equivalent display would cost around £1,500 extra for the Mac Pro).

Among the 2013 models still available, it is likely that it is the hard drive that slows down this generation of iMacs, so if you add a Fusion Drive you will be giving your iMac a huge boost.

The entry-level £899 iMac is one of the slowest Macs around. Those purchasing one should upgrade it with a £200 Fusion Drive – which combines an SSD with a hard drive – as this will make a much bigger impact than spending £150 to get the 2.7GHz iMac.

There is also quite a leap from the 21.5in iMac models to the 27in models. This isn't surprising as the 27in iMacs are aimed at the power user, and have a price to match.

Price

There are six iMac models available, with a few build-to-order options that you can add on at point of purchase. Our top iMac recommendation is that you buy a Fusion drive or an SSD as a build-to-order option. The iMac line-up is let down by the hard drives they are equipped with as standard.

It's also worth updating a 21.5in model at the same time as you purchase one so that it takes 16GB of RAM rather than the 8GB supplied as standard – it's not possible to update the RAM at a later date. However, the 8GB of soldered-on RAM on the entry-level 1.4GHz iMac cannot be upgraded at all, even at point of purchase. Accordingly we recommend the Fusion Drive option as it will speed up performance.

Prices

21.5in iMac 1.4GHz (500GB) £899
21.5in iMac 2.7GHz (1TB) £1,049
21.5in iMac 2.9GHz (1TB) £1,199
27in iMac 3.2GHz (1TB) £1,449
27in iMac Retina 3.5GHz (1TB) £1,599
27in iMac Retina 3.5GHz (1TB Fusion drive) £1,849

Build-to-order options

3.1GHz quad-core Intel Core i7 £160 (21.5in only)
3.5GHz quad-core Intel Core i7 £190 (27in only)
4GHz quad-core Intel Core i7 £200 (Retina iMac only)
16GB RAM £160
32GB RAM £480 (27in only)
3TB hard drive £120 (27in only)
1TB Fusion Drive £160
3TB Fusion Drive £280 (27in only)
256GB SSD £160
512GB SSD £400
1TB SSD £800 £640 (3.5GHz Retina)

Mac Pro

APPLE'S PROFESSIONAL WORKSTATION

Having neglected the Mac Pro for a few years, Apple eventually updated the line-up at the end of 2013. That leaves us with two standard Mac Pro models – a quad-core 3.7GHz Intel Xeon E5 (£2,499) and a six-core 3.5GHz Intel Xeon E5 (£3,299).

As well as sporting more cores and a different processor, the top-of-the range Mac Pro also features 16GB of RAM (rather than 12GB) and faster graphics cards – the Dual AMD FirePro D500 with 3GB of GDDR5 VRAM each (rather than the Dual AMD FirePro D300 with 2GB GDDR5 of VRAM). These are dual graphics cards, one of the selling points of the Mac Pro.

Apple claims that with the additional power, users will be able to "seamlessly edit full-resolution 4K video while simultaneously rendering effects in the background – and still have enough power to connect up to three high-resolution 4K displays".

Both standard units also feature 256GB flash storage, with build-to-order options for 512GB or 1TB of flash storage.

Those buying the Mac Pro will be choosing from the various build-to-order options, of which there are many. Choices include a 12-core 2.7GHz processor, 64GB of RAM, a 1TB flash drive, and the Dual AMD FirePro D700 GPUs with 6GB of GDDR5 VRAM. If you were to build the ultimate Mac Pro, it would cost £7,299.

Wondering how much space the Mac Pro will take up on your desk? The Mac Pro has a diameter of 16.7cm and is 25.1cm tall. It weighs 5kg, a fraction less than the 21.5in iMac. The old aluminium Mac Pro is a giant in comparison.

The Mac Pro offers six Thunderbolt 2 ports – that's enough to drive three 4K displays or six Thunderbolt displays, if you wanted to. You'll also find dual gigabit ethernet – two ethernet controllers, each connected to its own lane, ensuring that there is enough bandwidth to operate at full speed. As you would expect, the Mac Pro also offers 802.11ac Wi-Fi.

There is no FireWire port on the Mac Pro, but you can get a Thunderbolt to FireWire adaptor. There are four USB 3 ports, as with the Mac mini and iMac.

The Mac Pro lacks an optical drive. Most people probably have little use for an optical drive these days, but if you really think you need one, then there is always the option of purchasing Apple's USB SuperDrive for £65.

Speed

As you would expect from Apple's flagship Mac, the Mac Pro is fast. However, the year-old 27in iMac and the top-of-the-range 15in MacBook Pro aren't that far behind the entry-level Mac Pro. And if you bump up your iMac when you buy it with build-to-order options you can get a Mac for your money that rivals even the six-core Mac Pro model.

But there is more to the Mac Pro than the speed and many users will be attracted by many of its advanced technologies, such as the dual GPUs, the powerful multicore processors, the Thunderbolt 2 ports, and the superfast flash storage. For many, the build-to-order options will let them build a professional and powerful workstation capable of doing things iMac users can only dream of.

Yet there is something to be said for the iMac with 5K Retina display. The standard 5K iMac features an incredible screen, backed by a 3.5GHz quad-core Intel i5 CPU, 8GB of RAM, 1TB Fusion drive and AMD Radeon R9 M290X GPU for £1,999. Build-to-order options include a 4GHz i7 (£200), and upgrading the GPU to an AMD Radeon R9 M295X for £200. If you added these two features to the iMac, you would pay £2,399, which is still less than the Mac Pro and includes a 5K display; an equivalent Dell display costs just under £2,000.

Price

There are two Mac Pro models available, with a number of build-to-order options that you can add on at the point of purchase.

Configuring the ultimate Mac Pro will cost you a cool £7,779. If you have any cash left over, then you could add a Sharp 32in 4K monitor to that for another £2,999. Or why not go the whole hog and add three Sharp 4K monitors, setting you back £16,776. That would be some Mac setup.

If you have the cash, we would recommend the six-core Mac Pro over the quad-core, but even better, add as many build-to-order options as you can afford.

Prices
Mac Pro 3.7GHz (quad-core) £2,499
Mac Pro 3.5GHz (six-core) £3,299

Build-to-order options
3.5GHz six-core with 12MB of L3 cache £400 (quad-core only)
3GHz eight-core with 25MB of L3 cache £1,600/£1,200
2.7GHz 12-core with 30MB of L3 cache £2,800/£2,400
16GB RAM £80 (quad-core only)
32GB RAM £400/£320
64GB RAM £1,040/£960
512GB SSD £240
1TB SSD £640
Dual AMD FirePro D500 GPUs with 3GB GDDR5 VRAM £320 (quad-core only)
Dual AMD FirePro D700 GPUs with 6GB GDDR5 VRAM £800/£480

Which Mac?

HOW TO CHOOSE THE MAC THAT WILL SUIT YOU

With so many Macs to choose from, each with very different features and specs, it can get a little tricky when it comes to deciding which Mac to buy. How do you know which Mac is best for you? Should you buy a Mac mini, an iMac or a Mac Pro? Or would you be better off with a MacBook, MacBook Air or a Retina MacBook Pro? Which Mac is best for you really depends on your needs and how much you are prepared to spend to meet them.

As a rule Macs are more expensive than PCs, but that's really because there are more low-cost PCs available. If you want a laptop that costs less than £300, then you will have to settle on a PC (or find yourself a second-hand Mac). However, we think it's worth spending a little more to get a lower-priced Mac, rather than saving a few pounds buying a budget PC.

If you want to spend as little as possible on your new Mac, you have a few choices. The Mac mini is an obvious one, with the price starting at £399, but you will need to factor in the cost of a display as well as a mouse and keyboard if you don't already have those peripherals.

An alternative might be the £799 11in MacBook Air, which is a neat little laptop, although you may end up buying a separate display to plug into when sitting at your desk.

If you are happy to spend a little more on a reasonably priced Mac laptop, then you might like the 13in MacBook Air or the 13in MacBook Pro with Retina display. These models start at £849 for the Air, and £999 for the Pro, with the Pro version bringing a faster processor and more RAM as well as that gorgeous Retina display. The one thing in favour of the Air is the longer battery life (12 hours as opposed to nine). There is also the weight difference, but it's quite minor really – the Pro is 1.57kg, while the Air weighs 1.08kg. There's is now the added option of the new MacBook. Weighing in at 920g, it's lighter than any other Mac laptop, though, also less powerful. It's priced at £1,049 and £1,299.

If it's a reasonably priced desktop you are after, then the £899 iMac might look like a good option, but you should note that the specs in that machine are pretty similar to those in the £399 Mac mini. With that in mind, it might be better to spend a little more to get one of the other two 21.5in iMacs, although both of those cost more than £1,000.

Another option would be to get a build-to-order version of the iMac with a Fusion drive, which will bring a faster flash drive into the equation for an extra £200. That would bring the price of your iMac to £1,099, or if you did the same with the Mac mini, £599. In both cases we've found the Fusion drive a better option than the next model up in the same range, because the additional flash memory will speed up the Mac more than another model still restricted by a standard hard drive.

But what if you are prepared to spend a little more to get a decent Mac laptop? In that case we'd recommend the 15in Retina MacBook Pro. It costs £1,599 but comes with a decent quad-core Intel Core i7 processor as well as 16GB of memory. It also comes with 256GB of flash storage; if you think you need more you can get 512GB for £1,999, but we'd probably go for an external hard drive if we needed extra space.

If you want to spend a little more to get a decent Mac desktop, then the 27in iMac is a great option. Prices start at £1,499 and you get a decent quad-core Intel Core i5 processor. The only thing that lets the iMac down compared to the MacBook Pro is the slower hard drive that comes as standard, and the 8GB of RAM. Both of these factors can be rectified when you buy the Mac, as you can take up the 16GB of RAM option for an additional £160, and a Fusion drive or 265GB flash storage for another £160. That would bring the price of your iMac to £1,769.

If it's a top-of-the-range Mac you want, then you have two choices: the 27in Retina 5K display iMac, which costs £1,999; or the Mac Pro, Apple's workstation-class Mac, which features a Xeon E5 processor, 12GB of RAM, dual AMD graphics cards and 256GB of flash storage, with prices starting at £2,499. The Retina iMac comes with a Fusion drive, 8GB of RAM, and a superfast Intel quad-core i5 processor. That's a difference of £500, although with the iMac you gain the gorgeous display; to get a similar 5K display, such as Dell's UltraSharp 27 Ultra HD, to use with your Mac Pro would set you back £1,762. We'd be inclined to recommend the iMac in this case.

iPhone 6 Plus

APPLE'S BIGGEST PHONE, THE IPHONE PHABLET

When Apple introduced the iPhone 5 in 2012, it described it as the perfect size for a smartphone – you could hold it comfortably in one hand while reaching all four corners with the thumb of that hand. Apple might have been convinced back then that a 4in screen was perfect, but in the years that followed alternative smartphones arrived in sizes that dwarfed the iPhone 5. By 2014 the iPhone was one of the smallest smartphones available; it seemed that people didn't really mind that much if they couldn't reach the corner with their thumb.

Apple launched its first entry into the phablet category in September 2014. The iPhone 6 Plus is Apple's biggest ever iPhone with a screen that measures a whopping 5.5in (diagonally) and offers 1920x1080 resolution at 401 pixels per inch. Phablet is the term used to describe a large phone that is almost a tablet. The popularity of phablets is thought by some to be causing a decline in interest in tablets themselves, as people turn to large phones that have good-sized screens and bring the advantage of operating as a mobile phone.

The iPhone 6 Plus is available in silver, gold or space grey, and measures 158.1mm tall by 77.8mm wide, is a mere 7.1mm thick and 172g in weight. Apple addressed its concerns about users' comfort when holding such a big phone: the iPhone 6 Plus comes with a Reachability feature, which at a double-tap on the home button brings the top of the screen down so you can reach the controls.

The iPhone 6 Plus features Apple's A8 chip and the M8 motion co-processor. The motion co-processor chip is used to collect sensor data – it's a clever way to save battery life as it bypasses the processor. A barometer is also included inside the iPhone 6 Plus.

The iPhone 6 Plus offers Touch ID, and like the iPhone 6, NFC, which is a necessary technology if you intend to use Apple Pay (not yet launched in the UK).

There is also a new 8Mp iSight camera on the back with focus pixels and an f/2.2 aperture (also shared with the iPhone 6). The iPhone 6 Plus camera is the only Apple iPhone to offer optical image stabilisation, which makes for better pictures in low light. The iPhone 6 Plus shares many of its other camera features with the iPhone 6, including 43Mp panorama and the option of recording HD video at 60fps and slo-mo video at 120fps or 240fps. You also get cinematic video stabilisation and continuous autofocus video in both iPhone 6 models. Another feature offered only by the iPhone 6 and 6 Plus is 802.11ac Wi-Fi (other iPhones only go as high as 802.11n).

Perhaps the biggest deal for those looking to purchase a new phone is battery life. Apple says that the iPhone 6 Plus battery life gives up to 24 hours of talk time on 3G; up to 16 days/384 hours on standby; up to 12 hours of internet use on 3G, up to 12 hours on LTE, and up to 11 hours on Wi-Fi; up to 14 hours of video playback; and up to 80 hours of audio playback.

By contrast, Apple says that the iPhone 6's battery life gives up to 14 hours of talk time on 3G; up to 10 hours of internet use on 3G, up to 10 hours on LTE, and up to 11 hours on Wi-Fi; up to 11 hours of video playback; and up to 50 hours of audio playback.

So the iPhone 6 Plus gives you the most battery life you can get from an iPhone. This is no real surprise, as the iPhone 6 Plus's battery is listed at 2915mAh at 3.82 volts, which is substantially larger than the iPhone 6's 1810mAh battery.

Speed

The iPhone 6 and iPhone 6 Plus are powered by the same A8 processor, but at different clock speeds. The iPhone 6 Plus runs at 1.39GHz compared with the iPhone 6's 1.2GHz.

For that reason, the iPhone 6 Plus is faster than the iPhone 6. When we ran Geekbench the iPhone 6 Plus scored 1,626 (single-core) and 2,917 (multicore), while the iPhone 6 scored 1,517 (single-core) and 2,586 (multicore).

Graphics performance is also good, but we've yet to notice any real difference between the iPhone 6 Plus and the iPhone 5s, although as more graphics-heavy games appear you may be glad of the extra graphics prowess.

Price

The iPhone 6 Plus starts at £619. Each of the three models available costs £80 to £90 more than the equivalent capacity iPhone 6.

Prices
16GB iPhone 6 Plus £619
64GB iPhone 6 Plus £699
128GB iPhone 6 Plus £789

However, we'd advise against buying the 16GB entry-level version – you are likely to find it frustrating staying within 16GB, especially when Apple next updates its operating system (in 2014 the OS required as much as 5GB of space on some iPhones). The 64GB iPhone 6 Plus costs just £80 more for four times as much storage.

iPhone 6

THE 4.7IN SUCCESSOR TO THE IPHONE 5S

The iPhone 6 Plus wasn't the only larger iPhone to launch in 2014. The iPhone 6 was also introduced, with a screen that measures 4.7in (diagonally) and offers 1334x750 resolution at 326ppi.

This suggests that the iPhone 6 has the same pixel density as the iPhone 5s, but Apple has still dubbed its new screen 'Retina HD', presumably because it is counting the total number of pixels on display, rather than how close together they are. The iPhone 6 Plus offers a higher pixel density of 401ppi and is also described as Retina HD. Despite the similar sounding pixel count between the iPhone 6 and iPhone 5s, Apple has also made modifications to the newer screens' design, adding dual-domain pixels that allow for improved viewing angles, and other features that enhance the visibility of the display as well as a better contrast ratio (the contrast ratio on the iPhone 6 is in fact better than that on the iPhone 6 Plus).

iPhone 6 sports the same curvaceous design as the iPhone 6 Plus, albeit slightly smaller dimensions. It measures 138.1mm tall by 67mm wide, is just 6.9mm thick, and weighs 129g. It is available in silver, gold or space grey.

Although smaller than the iPhone 6 Plus, the iPhone 6 is still very large, and only the most gigantic hands would be able to comfortably reach to the edges in one-handed use. As a result Apple, also offers Reachability on the iPhone 6, which allows you to double-tap on the home button to pull the top of the screen down so you can reach the controls.

One major design change for the iPhone 6 and iPhone 6 Plus is the relocation of the on-off button. This was found at the top of the phone in previous generations, but now the button has moved to the side of the phone to make it easier to reach when you are holding it one-handed (the new home for this button does make taking screen shots harder, though).

Like the iPhone 6 Plus, the iPhone 6 features Apple's A8 chip and the M8 motion co-processor. The A8 is 50 percent more power-efficient than the A7, according to Apple.

A barometer is also included for measuring air pressure to determine your elevation (it can basically tell if you have been going upstairs). This is one of the new fitness and health features available to iPhone users. All iPhones also offer an accelerometer and gyroscope for the same purpose.

The iPhone 6 also offers Touch ID, and, as does the iPhone 6 Plus, NFC, which is a necessary enabling technology for using Apple Pay (not yet launched in the UK).

All of Apple's current iPhones offer an 8Mp camera. The iPhone 6 and iPhone 6 Plus camera still only offers 8Mp, but it gains focus pixels. Both iPhone 6 models and the iPhone 5s offer an f/2.2 aperture.

The iPhone 6 shares some other camera features with the iPhone 6 Plus. These include 43Mp panoramas, the option of recording HD video at 60fps and slo-mo video at 120fps or 240fps. There is also cinematic video stabilisation and continuous autofocus video. You will also find 802.11ac Wi-Fi in the iPhone 6, while the older models only go as high as 802.11n.

When it comes to battery life, Apple says that the iPhone 6 offers up to 14 hours of talk time on 3G; up to 10 hours of internet use on 3G, up to 10 hours on LTE, and up to 11 hours on Wi-Fi; up to 11 hours of video playback; and up to 50 hours of audio playback. You'll get more battery life from the iPhone 6 Plus, but the iPhone 6 battery is still better than those in the iPhone 5s and iPhone 5c, which both have identical battery life, according to Apple. The iPhone 5s/5c handsets offer up to 10 hours of talk time on 3G; up to eight hours of internet use on 3G, up to 10 hours on LTE, and up to 10 hours on Wi-Fi; up to 10 hours of video playback and up to 40 hours of audio playback.

Speed

Both the iPhone 6 and iPhone 6 Plus are powered by the same A8 processor, but it's running at different clock speeds. The iPhone 6 runs at 1.2GHz, while the iPhone 6 Plus runs at 1.39GHz, according to Geekbench.

When we ran Geekbench the iPhone 6 scored 1,517 (single-core) and 2,586 (multicore), while the iPhone 6 Plus scored 1,626 (single-core) and 2,917 (multicore). Not surprisingly the iPhone 6 Plus is faster than the iPhone 6.

The iPhone 6 is faster than the iPhone 5s, though. The iPhone 5s scored 1,409 (single-core) and 2,549 (multicore).

Graphics performance is good, but you are unlikely to notice any real difference unless you are using really graphics-heavy games.

Price

The iPhone 6 starts at £539 – £10 less than the original starting price of the iPhone 5s when it launched in 2013.

Prices
16GB iPhone 6 £539
64GB iPhone 6 £619
128GB iPhone 6 £699

Each of these phones costs £80 to £90 less than the same-capacity iPhone 6 Plus.

As we mentioned previously, we'd advise against buying the 16GB version as you are likely to find it frustrating staying within that 16GB storage limit, especially when Apple next updates its operating system (which in 2014 required as much as 5GB of space on some iPhones). The 64GB iPhone 6 costs just £80 more and for that you get 300% more storage.

iPhone 5s

THE 4IN iPHONE WITH TOUCH ID

In 2013 Apple upgraded its existing iPhone platform, splitting the iPhone 5 into two in the process. It created the iPhone 5s, which features Touch ID to let you unlock your iPhone and pay for things on the App Store merely by touching your finger to the home button, and the more playful iPhone 5c, which comes in a range of colours. Both phones are still available from Apple, although the larger capacities are now discontinued. They remain good options for those looking for a cheaper iPhone.

The iPhone 5s screen measures 4in (diagonally) and offers 1136x640 resolution at 326ppi. Although this may suggest that the iPhone 5s has the same pixel density as the iPhone 6, the iPhone 6 has a greater number of pixels in total, not to mention a superior screen with better viewing angles and contrast ratio.

The iPhone 5s sports a different design to the iPhone 6 models and the iPhone 5c. The iPhone 5s is more angular, with sharper edges, while the other models have curved edges. It is the smallest and lightest iPhone, measuring 123.8mm tall by 58.6mm wide and just 7.6mm thick, and weighs 112g. Like the iPhone 6 models, the 5s is also available in silver, gold or space grey.

Both of the cameras on the iPhone 5s offer improvements when compared to the iPhone 5c. The camera on the back has bigger pixels, a bigger sensor, a new True Tone flash, and various other hardware and software features.

As far as the bigger pixels are concerned, larger pixels yield greater electrical output, which produces clearer images in low-light conditions without any resort to messy noise-reduction techniques.

When Apple launched the iPhone 5s it was the first time that a smartphone manufacturer had opted to increase pixel size rather than pixel numbers. All iPhone cameras offer 8Mp – and this is sufficient. Cramming a load of pixels onto a sensor will not create a better image, it just means that the file size is bigger. The larger sensor and a bigger lens serve to let in more light, as does the faster aperture of f/2.2 instead of f/2.4. The faster f/2.2 aperture on the iPhone 5s really helps with indoor and dusky shooting. Both iPhone 6 models also offer a f/2.2 aperture.

The iPhone 5s lacks some of the camera features you'll find on the iPhone 6 Plus and iPhone 6, including 43Mp panoramas, the option of recording HD video at 60fps and slo-mo video at 120fps or 240fps. HD video and slo-mo features are all available on the iPhone 5s, but the quality is poorer. One other area where the iPhone 5s surpasses the iPhone 5c is the FaceTime camera, which offers auto HDR for photos.

Only the iPhone 6 models offer 802.11ac Wi-Fi. The older iPhone models only go as high as 802.11n.

When it comes to battery life, Apple says that the iPhone 5s offers up to 10 hours of talk time on 3G; up to eight hours of internet use on 3G, up to 10 hours on LTE, and up to 10 hours on Wi-Fi; up to 10 hours of video playback; and up to 40 hours of audio playback. You'll get more battery life from the newer, iPhone 6 models.

Speed

The iPhone 5s is powered by the A7 processor, which was first introduced with this phone in 2013, running at 1.3GHz, according to Geekbench. When the A7 chip launched it was a giant leap on its own account, offering a huge speed improvement thanks to its 64-bit capabilities.

When we ran Geekbench, the iPhone 5s scored 1,409 (single-core) and 2,549 (multicore). By comparison the iPhone 6 scored 1,517 (single-core) and 2,586 (multicore), while the iPhone 6 Plus scored 1,626 (single-core) and 2,917 (multicore). The Geekbench score of the iPhone 5s was more than twice that of the iPhone 5c.

When it comes to games and graphics capabilities, the GPU performance of the iPhone 5s is superior to that of the iPhone 5c; we saw some big differences using GFXBench 2.7's T-Tex C24Z16 1080p offscreen test. The iPhone 5s was able to push 25 frames per second, more than three and a half times the number of frames supported by the iPhone 5c. While these results are below the iPhone 6 and 6 Plus, it is unlikely you will really notice the extra unless you are playing the most power-hungry games.

Price

The iPhone 5s starts at £459, which is some £90 cheaper than the same model cost when it launched in 2013.

Prices
16GB iPhone 5s £459
34GB iPhone 5s £499

The iPhone 5s is the only iPhone available with a 34GB capacity. Apple removed the 34GB option from the line-up for its iPhone 6 models, which come only in 16GB, 64GB and 128GB versions.

But at just £40 more it's a no-brainer to buy the 34GB version of the iPhone 5s. We'd advise against the 16GB version, as you are likely to find it frustrating staying within that storage limit. When Apple updates its operating system it will take even more than the 5GB of space required on some iPhones by its 2014 update.

iPhone 5c

APPLE'S CHEAPEST, MOST COLOURFUL iPHONE

When the iPhone 5c launched in 2013 it disappointed some who were hoping for a low-cost smartphone from Apple. At launch the iPhone 5c cost £469 – only £80 less than the equivalent iPhone 5s. Months later the company introduced a 8GB version of the 5c for £429. Now that same 8GB version of the iPhone 5c costs £319, a saving of £110. The big question, though, is whether £319 now represents a good price for the iPhone 5c.

If you are determined to buy an iPhone but don't want to spend a lot, then the iPhone 5c might be worth considering. If price is your main concern, it's also worth looking around for a second-hand iPhone, or you may find you can get a good deal on a new handset from your mobile phone network. All the prices we quote are what Apple sells the iPhone for if you purchase it off-contract, allowing you to shop around for a monthly plan or pay-as-you-go contract that suits you (or perhaps you already have a great contract and don't want to lose it). It is also likely you will be able to find a contract with one of the UK mobile networks that will give you an iPhone 5c handset for free.

The main issue with the iPhone 5c is that it offers just 8GB of storage space; although we have heard of some mobile networks offering 16GB iPhone 5c models, Apple doesn't. You may find it hard to imagine that you will ever need a great deal of storage space, but it's worth considering that when the next version of the iPhone operating system is released you may well find that you will need more space to install the update than you have available on your iPhone.

In this case, while the leap up to the iPhone 5s is not easy to recommend – because at £140 more it is quite a significant extra chunk of cash – it will still give you twice as much potentially precious storage as the 5c. The 5s also comes with various other features such as Touch ID, so you can unlock your iPhone and pay for things on the App Store merely by touching your finger to the home button.

Like the iPhone 5s, the iPhone 5c has a screen that measures 4in (diagonally) and offers 1136x640 resolution at 326ppi.

The design of the iPhone 5c is more reminiscent of the original iPhone than the iPhone 5s and iPhone 6 models. It has a smooth plastic case that comes in five different colours: green, blue, yellow, pink and white. It's a fraction larger and heavier than the iPhone 5s, measuring 124.4mm tall by 59.2mm wide and just 8.97mm thick, and weighs 132g (only the iPhone 6 Plus is heavier).

In many ways the iPhone 5c is the same phone as the iPhone 5 was when it launched in 2012. Aside from the new case, on the inside the iPhone 5c has the same rear-facing camera and processor. The FaceTime camera on the front of the iPhone 5c is better than the one found in the iPhone 5, however, offering better visibility in low-light. The iPhone 5c will take panoramas, but burst mode shooting is not available, nor is slo-mo video (both are available on all other iPhone handsets).

When it comes to battery life, Apple says that the iPhone 5c offers exactly the same battery longevity as the iPhone 5s: up to 10 hours of talk time on 3G; up to eight hours of internet use on 3G, up to 10 hours on LTE, and up to 10 hours on Wi-Fi; up to 10 hours of video playback; and up to 40 hours of audio playback.

Speed

Although the iPhone 5c features the same A6 processor as the iPhone 5, in some of our tests it scored slightly worse than its predecessor. For example, the iPhone 5 was about 10 percent faster than the 5c in Geekbench tests. As for the iPhone 5s, that model's Geekbench score was more than twice that of the iPhone 5c. However, even these speeds will be more than enough for the average needs of a user.

The GPU performance of the iPhone 5c is also inferior to that of the iPhone 5s, with the latter achieving 25fps, more than 3.5 times more than the iPhone 5c. If you aren't playing games or editing video on your iPhone, though, it is unlikely that this will matter to you.

Price

The 8GB iPhone 5c costs £319. There is only an 8GB model available from Apple, so if you want 16GB or more then you will need to move up to the entry-level 16GB iPhone 5s. But as the 16GB iPhone 5s costs £140 more than the 5c at £459, if you are considering the iPhone 5s, then you might as well fork out another £40 and get the 34GB version of the iPhone 5s for £499.

iPad Air

APPLE'S FULL-SIZED iPAD

The iPad is Apple's tablet computer. It's partway between an iPhone and a laptop, offering you the extra screen space, but using exactly the same operating system as the iPhone, so if you already own an iPhone it will feel familiar. There are millions of apps available for the iPad that allow you to do anything from producing spreadsheets and presentations, to playing games, creating photographic masterpieces or editing home videos.

Apple sells two models of iPad Air: the iPad Air 2, launched in October 2014, and the iPad Air, which arrived the previous October. When the first iPad Air launched in 2013 it was already incredibly thin, just 7.5mm, but the iPad Air 2 is even thinner, a mere 6.6mm.

The Air 2 also has an upgraded rear-facing camera (8Mp to the iPad Air 1's 5Mp). There are certain shooting conditions in which the iPad Air 2 demonstrates its superiority – particularly close-up detail under studio lighting and in low-light conditions. The iPad Air 2 also gains some camera software features including slo-mo and time-lapse video modes, as well as burst mode and a timer. And panoramas: the iPad Air 1 already had these, but they can now go all the way up to 43Mp. We're always surprised that anyone would use the iPad as a camera – it is a rather inconvenient size, yet people often use one to take photos and videos, perhaps because of the size of the viewfinder.

Both iPad Air models offer Retina displays with a resolution of 2048x1536 and a pixel density of 264ppi. However, the iPad Air 2 adds an anti-reflective coating and, thanks to new manufacturing technologies, Apple has been able to remove the 'air gaps' between different elements of the screen, which effectively gives users more display clarity and makes it easier to see the screen from different angles – valuable if, for example, you're sitting next to someone and sharing the iPad screen to watch a movie.

The Air 2 also comes with a Touch ID fingerprint scanner built into the home button. Touch ID is convenient, enabling you to unlock your iPad, or an individual app, with a single touch of a finger rather than a passcode or password. As apps and websites integrate Apple Pay, you will be able to use Touch ID on your iPad to pay for things. However, you won't be able to use the iPad in the high street as it lacks the requisite NFC chip.

Other differences between the iPad Air 1 and 2 include a gold finish as an option for the newer model. The iPad Air 2 is available in silver, gold and space grey, while the iPad Air 1 is available only in silver or space grey. The grey model has a black rim around the screen, but all other iPads are white on the front.

Speed

The iPad Air 2 contains a new processor chip – the A8X, which is a souped-up version of the A8 that made its first appearance in the iPhone 6 and iPhone 6 Plus.

With its A8X processor chip, the iPad Air 2 is significantly quicker at general processing and handling graphical tasks than the iPad Air 1 (which has an A7 chip) – about 40 percent faster, on paper. But at this point that difference is more theoretical than practical. In our Geekbench tests the iPad Air 1 scored 1,468 (single) and 2,658 (multi), while the iPad Air 2 scored 1,818 (single) and 4,520 (multi).

In terms of graphics, Apple claims that iPad Air 2 users will see 2.5 times the graphics performance of the first iPad Air. That's great news for gamers, and video and photo-editing apps will also benefit from the enhanced graphics performance.

However, the iPad Air 1 can handle all current apps, and you're unlikely to see major speed gains with current software. Over time this may change but if all you do with your iPad is browse the web and read and write emails, then you are unlikely to notice any slowdown.

Price

The iPad Air 2 starts at £399 for the 16GB version. Next up is the 64GB model for just £80 more at £479, and the 128GB model costs £559.

The 16GB iPad Air 1 is just £80 cheaper than the entry-level iPad Air 2, at £319. Or you can pay another £40 and get the 32GB version for £359, which is still less than the price of a 16GB iPad Air 2. If Touch ID isn't important to you, you may prefer to pay less and get twice as much storage space.

When choosing which iPad to buy, there is also the decision of whether to get one that is capable of connecting to the mobile networks, rather than just Wi-Fi. The models that can use 3G and 4G in addition to Wi-Fi cost £100 more than the non-cellular models.

iPad mini

APPLE'S SMALLER IPAD

If the iPad Air is partway between an iPhone and a laptop, the iPad mini is partway between the iPhone 6 Plus and the iPad Air. It's a popular choice for those who want to read books. It also used to be popular because it was a lot lighter than Apple's full-sized iPad, but the difference in weight has since been scaled back: the iPad Air 2 weighs 437g while the iPad mini 3 weighs 331g. It's screen size that is the key difference between the iPad Air and iPad mini now, with the Air featuring a 9.7in Retina display and the mini a 7.9in display.

Apple now sells two models of iPad mini. The iPad mini 3 was launched in October 2014, and is essentially the same as the iPad mini 2, which launched in October 2013. Apple recently stopped selling the original iPad mini, which was launched in October 2012.

The main difference between the iPad mini 2 and 3 is the inclusion of Touch ID on the later model, and the option of a gold finish.

When Apple launched the newer iPad mini we were disappointed that it didn't also gain any of the features offered by the 2014 iPad Air. For that reason we generally advise saving £80 and purchasing the iPad mini 2 unless you really want Touch ID. The newer iPad costs £80 more than the previous year's model. For some, Touch ID may be worth the extra £80, but other than that there really is no other difference.

There is a much bigger difference between the iPad mini 1 and newer iPad mini models. You can still buy the 16GB original iPad mini for £199 – £70 less than what it sold for at launch (£269). This iPad lacks a Retina display, and is thicker (7.2mm compared with 7.5mm) and heavier (308g compared with 331g) than the other iPad mini models. Even if you find one for sale, we wouldn't recommend buying one.

If all you need is a low-cost device for reading books or watching video when commuting, the iPad mini 2 will be ideal.

All the iPad minis have the same rear and forward-facing cameras. The camera on the rear offers 5Mp photos while the front-facing camera – used predominantly for FaceTime video calling – offers 1.2Mp. The only real difference between the iPad minis is that the newer models offer panorama shooting while the original iPad mini didn't. The original iPad mini lacked the 3x video zoom.

All iPad minis have a battery life that gives up to 10 hours of web surfing, video or music on Wi-Fi, and nine hours over a mobile data network.

Speed

Another key difference between the original iPad mini and the newer iPad mini models is the fact that the earlier model features the A5 chip rather than the A7 and M7 motion co-processor combo. The A5 processor first appeared in the iPhone 4s, which should give you an idea of just how old that processor is now. It's a 32-bit system-on-a-chip that also powers the fifth-generation iPod touch and the Apple TV.

The iPad mini 2 and 3 both feature the A7 processor, which can also be found in the iPad Air 1. This is a 64-bit system-on-a-chip that first appeared in the iPhone 5s in 2013 and was the first 64-bit processor to ship in a consumer smartphone.

The A7 is around four times as fast for general processing and about eight times as fast for graphical processing. As time goes by the most demanding tasks – extremely graphically ambitious 3D games, video and photo editing, and all the more processor-intensive apps that will be released in the next few years – will begin to tax the powers of the iPad mini 1, which only offered the A5 chip.

Price

There's an £80 gap between the iPad mini 2, and the iPad mini 3. Paying the £80 for the Touch ID isn't all that attractive, you might prefer to spend £100 more and get a Wi-Fi and cellular version. Each model is available for Wi-Fi only, or you can add cellular capabilities for another £100, which will enable you to connect to a mobile phone network when you are out and about.

iPods

THE MP3 PLAYER THAT STARTED IT ALL

Apple sells three types of iPod: the iPod shuffle, the iPod nano and the iPod touch.

The iPod touch is far more than just a simple music player. It comes equipped with essentially all the features of a fully fledged iPhone bar the call capabilities. The iPod nano is also a capable device, and small enough to carry anywhere, while the iPod shuffle is simple, inexpensive and tough.

Currently, the iPod shuffle offers a humble 2GB of storage, while the iPod nano boasts a rather more spacious 16GB. It's worth bearing in mind that this means the shuffle can hold around 450 songs encoded at 128kb/s, with the nano's 16GB topping out at around the 4,000 mark. The only model to go higher than 16GB is the iPod touch, which is available in 16GB, 32GB, 64GB and 128GB variants.

The shuffle is probably the most true to that original iPod, as it focuses solely on playing audio. The lack of a screen has meant that in the past you had to remember what was on the device, and switching between tracks was something of a lottery. Now, thanks to the voiceover feature, the iPod shuffle will read out the name of the track, podcast, audiobook or playlist to you, and allow you to choose the one you want to listen to.

The most obvious feature that differentiates the nano and the shuffle is the nano's 2.5in multitouch display. This enables it to have a range of included apps that broaden its appeal. Music is, of course, still the primary function, with the cool ability to create genius mixes on the fly by tapping a button while a song is playing; the device will then automatically generate a playlist from your library based on that track. A screen also means video, with the nano playing any media synced to it from your iTunes account.

The iPod touch is in a different category to its smaller siblings. As the only iPod to run a full version of iOS, the iPod touch has access to the full App Store, with all the games, productivity tools, social media and camera apps that you'd expect to find on an iPhone, as well as web access. The built-in camera, while not quite up to the iPhone quality, still offers great shots.

iPods may not share the same always-on nature of smartphones, but battery life remains an important factor for any portable electronic device. You might think that the iPod shuffle would win this category due to its lack of a power-sapping screen, but its diminutive size means a small battery and it lasts for only 15 hours. It loses out to the nano, which goes for around 30 hours, while the iPod touch – which houses the largest battery in the range – holds out for a massive 40 hours of listening time. If you watch video, though, things immediately change, with the nano affording 3.5 hours and the touch falling to eight hours.

The iPod shuffle is best for sports enthusiasts because it's cheap, hardy and can clip onto pretty well anything. Those with smaller music libraries will also appreciate the value of an inexpensive device that is still powerful thanks to the voiceover feature, as will everyone who don't want to spend a lot on a music player.

The iPod nano is ideal for those who want a svelte device with more capacity than a shuffle.

The iPod touch has a higher price tag and in many ways strays rather too close to the smartphone world to make it a compelling device for those who already own an iPhone. If you do want an internet-capable iOS device, then you can pick up an iPod touch for less than the price of an iPad.

If you don't want to spend a great deal on a device, and don't mind a limited set of functions, then the iPod shuffle is a tempting option at £40. Moving up to an nano will give you a few more advanced features and eight times the storage, but the price jumps to £129. You'll find the four models of iPod touch priced £159 (16GB), £199 (32GB), £249 (64GB) and £329 (128GB).

Which iPad and iPhone?

HOW TO CHOOSE THE iOS DEVICE THAT WILL SUIT YOU

With four iPhones and four iPads to choose from, each with very different specs, it can be tricky to decide which iOS device to buy.

Those who want a 'phablet' experience – midway between a phone and a small tablet – might be interested in the iPhone 6 Plus. Fans of gaming and movies will also like the 6 Plus's big screen. Some business users may find the big screen good for productivity apps. The 6 Plus is likely to be the phone of choice for early adopters and others who like to have the latest thing, and for those on a big budget.

If the iPhone 6 Plus is a bit too big (and more than a few buyers have found this), then you might go for the smaller iPhone 6. It still has appeal for those who want a bigger screen (for games and films in particular, but also work apps and a generally more immersive experience) but a more portable device. The iPhone 6 is easier to slip into a pocket (and to use one-handed) than the iPhone 6 Plus. It's also a bit more affordable.

But what if you don't want the iPhone 6 with its 4.7in screen or the iPhone 6 Plus with its 5.5in screen? The iPhone 5s misses out on a lot of the features in the newer iPhones, including the latest processor, various camera features including 43Mp panoramas, the ability to use Touch ID in-store (when Apple launches Apple Pay in the UK), better battery life and more. But if the smaller screen size is crucial, then it's still a good phone. And it does feature Touch ID (albeit without the NFC chip that will enable Apple Pay on your high street). It's a good deal, especially the 32GB version.

There are various features that the iPhone 5s has that the iPhone 5c doesn't, like the Touch ID fingerprint scanner and a better camera with better photography features. It's the cheapest iPhone, but it's not necessarily the best deal, crippled as it is by its 8GB drive.

The step up from iPad Air 1 to iPad Air 2 brings a faster processor, a better rear-facing camera (8Mp, up from 5Mp) and Touch ID, as well as a device that is 6 percent lighter and 19 percent thinner, with a less reflective screen and the prospect of iOS update support for about a year more than the iPad Air 1. Is all that worth an extra £80? Probably.

The iPad Air 1 is still a great iPad, though, fast enough for all current apps. Those who have light use in mind (email, browsing the web, simple games) should be fine with it, and would save the extra £80. However, such customers might want to consider a cheaper option still: the iPad mini.

The first and most obvious thing to say is this: £80 extra for the iPad mini 3 (compared with the equivalent mini 2) is a tough sell. All you get for that is Touch ID, and while Touch ID is cool and convenient, it's hardly worth £80.

The two iPads are identical in every other way except for colour options – for example, the iPad mini 2 and 3 offer the same A7 chip. This means that there's no real reason to upgrade.

There may also be a newer iPad on the way. Rumours suggest and iPad Pro is in the pipeline.

Apple TV

APPLE'S SET-TOP BOX

The Apple TV is a connected set-top box, measuring 23mm by 98mm by 98mm and weighing 27g, that offers access to iTunes TV shows and movies, as well as content from Netflix, YouTube and Vimeo. You can also stream content to your TV from your Mac, iPhone and iPad. It costs £59.

The Apple TV isn't a TV in the normal sense of the word, because it doesn't have free-to-air channels or a digital video recorder to store shows to watch at a more convenient time. However, it does offer what could be described as channels, and this content keeps on growing, leaving us hopeful for a future where the Apple TV will include links to on-demand services just like our iPhones and iPads do – think the iPlayer and 4oD apps and you're not too far away.

Apple has made multiple updates to the Apple TV software over the years, adding a number of new app-style TV channels, delivering new content to Apple TV users. Most recently the Now TV app addition brought Sky entertainment, movies and sports content to the Apple TV, for a subscription.

Probably the most popular app on the Apple TV is Netflix. In many ways it's the only reason we recommend the Apple TV right now, because without it there would be very little content available to UK users. When a Netflix subscription costs just £5.99 a month, it is very difficult to recommend spending almost that much on hiring a single movie to watch via Apple's own iTunes Store, although you will find some iTunes content that won't appear on Netflix for months or years – or maybe not at all.

In the US the Apple TV includes Hulu Plus, HBO Go, Showtime Anytime, Fox Now, Watch ABC, Disney Channel, Disney XD, Disney Junior, PBS, A&E, History, Lifetime, WatchESPN and much more.

It is possible to run apps for some services on an iPhone, iPod Touch or iPad and then stream them to the Apple TV using AirPlay – but the Apple TV really needs to provide direct access to those services without requiring any expensive additional hardware.

Despite the limited content here in the UK there is still a lot to like about the Apple TV. It's well built and easy to use. Some of the better features work only with other Apple products, but if you own those products then the Apple TV is a great addition.

We like the Apple TV's user interface too. It's simple and intuitive, as you'd expect from Apple, and will be familiar to all iPad and iPhone users as it utilises the bright and bold iOS looks. You navigate the setup menus and input Wi-Fi network and password via the included Apple TV remote or using your iPhone and the Remote app. You can also pair it with a Bluetooth keyboard. Using the keyboard of the iPhone app simplifies the task of entering network passwords or using the search function when browsing content.

The Apple TV includes an HDMI interface with 1080p output for connecting to your high-def TV, as well as built-in Wi-Fi for your home network. There's no hard drive inside that tiny little box, so you can't download films or TV programmes for permanent storage, but you can download purchases onto a Mac or PC using iTunes and then stream them to the Apple TV using Apple's AirPlay wireless technology. AirPlay will also allow you to stream video from any iOS mobile device.

New Apple TV on its way

The last time Apple updated the Apple TV was back in January 2013, and even then it was just a minor update. Speculation about a fourth-generation Apple TV has been mounting, and it's certainly possible that Apple is gearing up to launch a new Apple TV this year.

In the two years since the last Apple TV update, many competing products from rival companies have launched, so Apple really needs to get a move on if it wants to dominate the set-top box market.

This new Apple TV may be smaller than the existing one, and it may feature a new remote, be Siri-activated, or even, rumour has it, be controlled using Kinect-like gestures.

Other rumours suggest that the new TV could include access to the iOS App Store so that users can purchase apps that can be viewed on their TV set – as well as games that can be played on the Apple TV. Our biggest wish, though, is that Apple brings the UK on-demand channels to the Apple TV – all its competitors offer them and their absence represents a serious failing on Apple's part.

Hopefully, any new features coming to the Apple TV will work on the current model as well as any new one that Apple launches.

Apple Watch

APPLE REINVENTS THE SMARTWATCH

Apple unveiled the Apple Watch back in September 2014, band finally went on sale on 24 April 2015.

The best news here is that Apple's not just launching a smartwatch but a whole raft of smartwatches. By combining the three different Apple Watch categories, the two different face sizes, and the accompaniment of straps, there is the potential for 38 different Apple Watches, so there will be a style to suit anybody. And crucially, since Apple is offering two watch face sizes, the Apple Watch will be as comfortable on a female wrist as it is a man's.

Where other companies have failed to come up with a smartwatch design that suits anyone, Apple has solved the issue by coming up with multiple designs to suit everybody.

Rather than try and make one watch to suit everyone, Apple has designed three basic Apple Watch varieties targeted at different groups of people. Starting at £299, the Watch Sport, for example, is ruggedised and has a strengthened Ion-X glass face so it should be able to take some bashing. It's also the lightest of the three Apple Watch editions because its case is made from anodised aluminium. The Watch Edition is clearly designed for the fashion-conscious, with a beautiful 18-carat gold case available in yellow or rose gold; it even comes in a fancy leather box that doubles as a charging cradle. Prices start at a staggering £8,000.

The watch face itself comes in two sizes: one is 42mm high, the other 38mm. The sapphire (for the Apple Watch and Watch Edition) or Ion-X glass face (for the Apple Watch Sport) sits in a case made from stainless steel, aluminium or gold, depending on which of the three models you opt for (Apple Watch, Apple Watch Sport or Apple Watch Edition, respectively). The stainless steel finish is available in standard or black, the aluminium finish in silver or grey, and the 18-carat in yellow gold or rose gold.

There is also a collection of straps to choose from, including link bracelet, sport band, leather loop, classic buckle, modern buckle and Milanese loop. The leather loop and sport band options are offered in multiple colour choices. The sport band comes in black, white, pink, blue and lime green, for example.

And if that's not enough customisation options for you, there are a number of watch faces to choose from – some are even animated. And you can change the colours and design elements of these.

The problem that many of the current smartwatches have is that the user interface is packed into a tiny display and you need to manipulate those titchy visual elements using your fingers – which are inevitably bigger than the elements you are trying to touch.

Apple's solution is to make use of the stud on the side of the watch that was once used to wind up clockwork watches. This stud – its proper name is the crown – has been turned into what Apple calls a Digital Crown. This Digital Crown solves the problem of swiping through icons on a minuscule display. You can use the crown to zoom in on interface elements and scroll through content on the watch face, without your fingers obscuring the view. The Digital Crown can be used to navigate through lists as well as zoom in on data, maps and photos.

This doesn't mean that the watch face isn't touch-sensitive. You can tap and swipe the Apple Watch face. In fact, the Apple Watch can determine just how hard you touched the screen. It can distinguish between a normal tap, used to select things, and a harder press, used to access contextual menus. Apple calls this technology Force Touch.

You aren't the only one doing the tapping when it comes to the Apple Watch. The watch incorporates what Apple calls a taptic engine, which lets it 'tap' your wrist to alert you to notifications. It's similar to the vibrate function on an iPhone, except that only you know that you are being nudged.

You can also interact with the Apple Watch via Siri, dictating messages or requesting turn-by-turn directions.

There will be various apps available for the Apple Watch. These are slimmed-down snippets of apps, referred to by Apple as 'Glances'. You will be able to glance at Messages, Mail, Weather, Calendar, Maps, Passbook, Music, Photos and more. Apple will also offer its own Activity app for the Apple Watch – it uses three circles to demonstrate how close you are to meeting your targets for calories burned – and a number of other health and fitness apps will also be available.

You will be able to use the Apple Watch to pay for things, just as soon as Apple launches its Apple Pay technology in the UK. All you do is double-click the button and hold up your watch to a payment reader. This is made possible because the Apple Watch includes an NFC chip, as do the iPhones 6 and 6 Plus. For added security, if you take the Apple Watch off, it'll lock and require a code before you can purchase anything.

Apple peripherals

AirPort Time Capsule

2TB £249, 3TB £349

The Time Capsule works with Apple's Time Machine app to make backing up your Mac really simple. It comes with 2TB or 3TB of storage and continuously makes a copy of everything on your Mac, backing up the files you've changed automatically, wirelessly, and in the background.

Full review: tinyurl.com/Lh6pjqu

AirPort Express

£79

Apple's AirPort Express is a Wi-Fi base station that also features the ability to stream audio from a Mac, iPad or iPhone to a stereo using AirPlay – kind of like an Apple TV for your stereo. It also works as a wireless access point to extend the range of a network but is only 802.11n-capable.

Full review: tinyurl.com/q4xqszq

AirPort Extreme

£169

The AirPort Extreme is a Wi-Fi base station that combines the functionality of a router, network switch and wireless access point. You can also attach a hard drive to it for wireless network attached storage (NAS). It supports 802.11ac. Note that AirPort devices are routers, not modems.

Full review: tinyurl.com/mfdLLsc

Thunderbolt Display

£899

Introduced in 2011, Apple's Thunderbolt Display is almost four years old. It offers 2560x1440 resolution, 375cd/m² brightness, and a 1,000:1 contrast ratio. But it's more than a monitor – it offers three USB 2.0 ports, a FireWire 800 port, gigabit ethernet and, of course, a Thunderbolt port.

Full review: tinyurl.com/nkhkzm8

Magic Trackpad

£59

Apple introduced the Magic Trackpad back in 2010. It's similar to the trackpad on a MacBook, and it's designed to complement Apple's Wireless Keyboard as an alternative to a mouse. The Magic Trackpad's functions are practically identical to its laptop counterparts.

Full review: tinyurl.com/qd474vb

Magic Mouse

£59

Sounding a bit like a kid's superhero, the Magic Mouse is a multi-touch Bluetooth mouse that lets you click anywhere, scroll in any direction and perform gestures like you do on the Trackpad. It's a bit more precise to use than the Magic Trackpad and is included with every new iMac.

Full review: tinyurl.com/nc9o95e

Apple Wireless Keyboard

£59

Like the Magic Mouse, the Bluetooth-enabled Apple Wireless Keyboard is available with every new iMac. Its use doesn't stop with the Mac, though. Apple's Wireless Keyboard can be paired with an iPad, iPhone or an Apple TV to make entering data easier on those devices.

Full review: tinyurl.com/kuoa86k

Apple Keyboard

£40

There is also a wired keyboard available for those who prefer not to be constantly looking for batteries. It features a numeric keyboard, which is handy if you are often working with data. We love the Apple keyboards because they are quiet to use and the low profile helps avoid RSI.

Full review: tinyurl.com/px5rj8c

Apple EarPods

£25

Designed according to the geometry of the ear, Apple's EarPods are more comfortable for many people than other earbud-style headphones. A built-in remote lets you adjust the volume, control the playback of music and video, and answer or end calls with a pinch of the cord.

Full review: tinyurl.com/mmvo52c

Apple In-Ear Headphones

£65

Apple says its In-Ear Headphones with a mic and remote are "engineered for superior acoustic accuracy, balance and clarity". Each earpiece contains two dedicated drivers – a woofer to handle bass and mid-range, and a tweeter for high-frequency audio. If you prefer in-ear headphones – which tend to let less sound leak, so you don't have to blast the sound out as high – these could be a good option.

Apple software

OS X 10.10 Yosemite

Free

The latest version of Apple's operating system for the Mac launched in October 2014 with a completely new look. Benefits of the new OS include better continuity between your iPad, iPhone and Mac, with features such as AirDrop and Handoff making it easier to move between devices.

Full review: tinyurl.com/ohv23hs

iOS 8

Free

Apple introduced iOS 8 in September 2014. The new operating system for iPad and iPhone bought a way to share content with your family and iCloud Drive, making it easier to store and access data in the cloud. Other additions include extensions, improved keyboard and the Health app.

Full review: tinyurl.com/kmavwnw

Final Cut Pro X

£229.99

Final Cut Pro X is Apple's professional video editing suite. You can work with multiple streams of 4K ProRes at full resolution, play back complex graphics and effects in real time without rendering, output 4K video to ultra-high-definition displays, and create 3D titles.

Full review: tinyurl.com/phs7zc7

Logic Pro X

£149.99

Apple's Logic Pro X is Apple's professional music creation software. It includes a huge collection of instruments, effects and loops, as well as drummer tracks. It's aimed at professionals but is also a great step up from GarageBand for those who want to get serious about music creation.

Full review: tinyurl.com/nfgavnz

GarageBand

Mac £3.99, iOS £3.99

This music creation software is available for both Mac and iOS. It offers a complete sound library with software instruments and virtual session drummers. You can learn to play an instrument as well as play, record, create and share your hits. Free with new Macs and iOS devices.

Full review: tinyurl.com/nk5srLq

iMovie

Mac £10.99, iOS £3.99

This home movie making software is available for iPhone, iPad and Mac. You can create an HD movie, or quickly put together a Hollywood-style trailer. It's an easy way of turning the video you take on your iPhone into something you'd want to share. Free with new Macs and iOS devices.

Full review: tinyurl.com/pc7xp3e

iTunes 12

Free

Apple's iTunes was originally music jukebox software that came into its own with the launch of the iPod. Since then iTunes has grown and is now the means by which users can manage all their media: music, movies, apps and more. Use iTunes on a Mac to access the iTunes Music Store.

Full review: tinyurl.com/kj32hvu

Pages

Mac £14.99, iOS £7.99

Pages is Apple's answer to Microsoft Word (and is compatible with Word). It's a word processor for Mac and iOS that works seamlessly between the different devices. In many ways it's more of a page layout application for creative people, with more design-led features than Word.

Full review: tinyurl.com/qfdzfjc

Keynote

Mac £14.99, iOS £7.99

Keynote is a presentation app for Mac and iOS that is basically Apple's answer to PowerPoint. It features really easy-to-use tools, some great effects, animations and transitions for creating attractive presentations. You can save Keynote documents as PowerPoint files if you wish.

Full review: tinyurl.com/nz3q3uf

Numbers

Mac £14.99, iOS £7.99

Apple's answer to Excel is Numbers, a spreadsheet app that can be used on both Mac and iOS devices. Because it's Apple, Numbers lets you turn your data into a thing of beauty, dropping your figures onto one of Apple's templates, but it also does the maths, supporting over 250 functions.

Full review: tinyurl.com/o5qnk4g

In praise of the iPod shuffle

IT DOESN'T DO MUCH, BUT IT'S REALLY GOOD AT WHAT IT DOES

By Kirk McElhearn

Apple has updated what's left of the iPod line. It boosted the processor and improved the camera on the iPod touch and added some new colours. It also added new colours to the iPod nano and shuffle.

You may wonder why Apple is still selling the iPod shuffle. After all, when you can have an iPhone that runs apps, takes photos, records and plays HD video, and uses GPS to give you directions – or an iPod touch with most of those features – why keep selling a tiny little device that does nothing more than play audio? Because the iPod shuffle plays audio and nothing more.

I've owned several shuffles over the years. I bought the initial model, which looked like a white USB stick, back in 2005, when it was first released. The second one, similar to the current model, came into my hands in early 2007, and I still use it, eight years later. I bought a third generation shuffle – the one that looked like a tiny, buttonless sliver of aluminium – but sold it at some point.

I often use my iPhone to listen to audio, but I still use the shuffle to listen to music or audiobooks when I walk. It's still popular with people who use it when they're active, and some use it to have an easy to use music source in their cars.

Fourth-generation iPod Shuffle.

It's easy to operate, even with sweaty hands. There's no passcode (or Touch ID) needed; just turn it on, press the centre button to play, press again to pause, and use the control ring to change the volume. It's light and unobtrusive, and it clips on to my clothes.

You need wired headphones, but I don't worry about audio quality when I'm using the shuffle, especially if I'm listening to audiobooks. I like Apple's earbuds: the shuffle comes with the older earbuds, not the more recent EarPods, which fall out of my ears every time I breathe. With the shuffle, I don't need to use my heavier, more complicated Bluetooth headphones, nor worry about whether they're charged.

There's something satisfying about listening to audio on a device that is so self-effacing. You clip it on, plug in the earbuds, and listen

The shuffle doesn't hold a lot of audio, compared to other devices, and it can't stream anything from the cloud. It has only 2GB of flash storage (earlier models held from 512MB to 4GB), but that's enough for more than 15 hours of music (at 256kb/s AAC), enough to have a good variety of music to listen to when running or cycling. (Use a lower bit rate and double that amount.)

There's something satisfying about listening to music or spoken word on a device that is so self-effacing. You clip it on, plug in the earbuds or headphones, and listen. There's no need to worry about network connections, or app updates, and the battery lasts up to 15 hours. And it's nearly unbreakable: I've dropped mine many times, and there's no screen to worry about; you can toss it into a bag and be sure you won't damage it.

This minimalist audio player is one of the best iPods Apple has made. I'm glad it's still around; I just ordered a new one.

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